

Petition For Revival Of An Application For Patent Abandoned
Unintentionally Under 37 CFR 1.137(b) (Large Entity)

COPY

Docket No.

55750 (45672)

In Re Application Of: **Takako ADACHI and Makoto SHIOMI**

Serial No.	Filing Date	Examiner	Group Art Unit
09/820,021	28 March 2001	Zamani, Ali A.	2674

Invention:

LIQUID CRYSTAL DISPLAY DEVICE

Attention: Office of Petitions
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

NOTE: If information or assistance is needed in completing this form, please contact Petitions Information at (703) 305-9282.

The above-identified application became abandoned for failure to file a timely and proper response to a notice or action by the Patent and Trademark Office. The date of abandonment is the day after the expiration date of the period set for reply in the Office notice or action plus any extension of time actually obtained.

APPLICANT HEREBY PETITIONS FOR REVIVAL OF THIS APPLICATION

NOTE: A grantable petition requires the following items:

- (1) Petition fee;
- (2) Reply and/or issue fee;
- (3) Terminal disclaimer with disclaimer fee--required for all utility and plant applications filed before June 8, 1995; and for all design applications; and
- (4) Statement that the entire delay was unintentional.

1. A proposed reply to the above-identified notice or action:

is enclosed. was filed on _____

The proposed reply is in the form of: Continuation Application

2. The issue fee:

is enclosed. was paid on _____

3. The abandoned application was a:

design application. utility application. plant application.

4. A terminal disclaimer (and fee) disclaiming a period equivalent to the period of abandonment is enclosed.

5. Since this utility/plant application was filed on or after June 8, 1995, no terminal disclaimer is required.

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Unintentionally Under 37 CFR 1.137(b) (Large Entity)

Docket No.
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In Re Application Of: **Takako ADACHI and Makoto SHIOMI**

Serial No.	Filing Date	Examiner	Group Art Unit
09/820,021	28 March 2001	Zamani, Ali A.	2674

Invention:

LIQUID CRYSTAL DISPLAY DEVICE

Calculation and Payment of Fees

Enclosed are the following fees:

6. Petition fee under 37 CFR 1.17(m) in the amount of: \$1,300.00

7. Fee for amendment in the amount of: _____

8. Fee for extension of time to respond to Office Action in the amount of: _____

9. Issue fee in the amount of: _____

10. Continuing application filing fee in the amount of: \$750.00

11. Terminal disclaimer fee in the amount of: _____

12. _____

Total fees enclosed: \$2,050.00

The fee of \$2,050 is to be paid as follows:

A check in the amount of the fee is enclosed.

The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account No. 04-1105

Petition For Revival Of An Application For Patent Abandoned
Unintentionally Under 37 CFR 1.137(b) (Large Entity)

COPY Docket No.
55750 (45672)

In Re Application Of: Takak ADACHI and Makoto SHIOMI

Serial No. 09/820,021	Filing Date 28 March 2001	Examiner Zamani, Ali A.	Group Art Unit 2674
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Invention:

LIQUID CRYSTAL DISPLAY DEVICE

Statement

The entire delay in filing the required reply from the due date for the required reply until the filing of a grantable petition under 37 CFR 1.137(b) was unintentional.

In addition, please note the Supplemental Statement attached.

David A. Tucker
Signature

Dated: July 18, 2003

David A. Tucker
Reg. No. 27,840
Attorney for Applicant
Edwards & Angell, LLP
P.O. Box 9169
Boston, MA 02209
Telephone (617) 517-5508



21874

PATENT TRADEMARK OFFICE

CC:



COPY

Practitioner's Docket No. 55750 (45672)
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: T. Adachi, et al.
Application No.: 09/820,021 Group No.: 2871
Filed: March 28, 2001 Examiner: Unknown
For: LIQUID CRYSTAL DISPLAY DEVICE

Mail Stop: NO FEE AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT TRANSMITTAL

- Transmitted herewith is a Request for Reconsideration for this application.

STATUS

- Applicant is
 - [] a small entity. A statement:
[] is attached.
[] was already filed.
 [X] other than a small entity.

EXTENSION OF TERM

NOTE: "Extension of Time in Patent Cases (Supplement Amendments) -- If a timely and complete response has been filed after a

CERTIFICATE OF MAILING/TRANSMISSION (37 C.F.R. SECTION 1.8(a))

I hereby certify that, on the date shown below, this correspondence is being:

MAILING

[X] deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

FACSIMILE

[] transmitted by facsimile to the Patent and Trademark Office (703) _____._____

Kathryn A. Grindrod
Signature

Date: May 15, 2003

Kathryn A. Grindrod
(type or print name of person certifying)

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after expiration of the shortened statutory period.

If a timely response has been filed after a Final Office Action, an extension of time is required to permit filing and/or entry of a Notice of Appeal or filing and/or entry of an additional amendment after expiration of the shortened statutory period unless the timely-filed response placed the application in condition for allowance. Of course, if a Notice of Appeal has been filed within the shortened statutory period, the period has ceased to run." Notice of December 10, 1985 (1061 O.G. 34-35).

NOTE: See 37 C.F.R. Section 1.645 for extensions of time in interference proceedings, and 37 C.F.R. Section 1.550(c) for extensions of time in reexamination proceedings.

3. The proceedings herein are for a patent application and the provisions of 37 C.F.R. Section 1.136 apply.

(complete (a) or (b), as applicable)

(a) [] Applicant petitions for an extension of time under 37 C.F.R. Section 1.136 (fees: 37 C.F.R. Section 1.17(a)(1)-(4)) for the total number of months checked below:

	Extension (months)	Fee for other than <u>small entity</u>	Fee for <u>small entity</u>
[]	one month	\$ 110.00	\$ 55.00
[]	two months	\$ 400.00	\$ 200.00
[]	three months	\$ 920.00	\$ 460.00
[]	four months	\$ 1,440.00	\$ 720.00

Fee: \$ _____

If an additional extension of time is required, please consider this a petition therefor.

(check and complete the next item, if applicable)

[] An extension for _____ months has already been secured. The fee paid therefor of \$ _____ is deducted from the total fee due for the total months of extension now requested.

Extension fee due with this request \$ _____

OR

(b) [X] Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.

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FEE FOR CLAIMS

4. The fee for claims (37 C.F.R. Section 1.16(b)-(d)) has been calculated as shown below

(Col.1)	(Col. 2)	SMALL ENTITY			OR	OTHER THAN A SMALL ENTITY	
Claims Remaining After Amendment	Highest No. Previously Paid For	Present Extra	Rate	Addit. Fee		Rate	Addit. Fee
			\$9.00	\$		\$18.00	\$
	Independent Claims		\$42.00	\$		\$84.00	\$
First Presentation of Multiple Dependent Claim+			\$140.00	\$		\$280.00	\$
					Total Addit. Fee		\$

* If the entry in Col. 1 is less than the entry in Col. 2, write "O" in Col. 3,

** If the "Highest No. Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest No. Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest No. Previously Paid For" (Total or Indep.) is the highest number found in the appropriate box in Col. 1 of a prior amendment or the number of claims originally filed.

WARNING: *"After final rejection or action (Section 1.113) amendments may be made canceling claims or complying with any requirement of form which has been made." 37 C.F.R. Section 1.116(a) (emphasis added).*

(complete (c) or (d), as applicable)

(c) [X] No additional fee for claims is required.

OR

(d) [] Total additional fee for claims required \$ _____.

FEE PAYMENT

5. [] Attached is a check in the sum of \$ _____.
[] Charge Account No. _____ the sum of \$ _____.
A duplicate of this transmittal is attached.

COPY

FEE DEFICIENCY

NOTE: If there is a fee deficiency and there is no authorization to charge an account, additional fees are necessary to cover the additional time consumed in making up the original deficiency. If the maximum, six-month period has expired before the deficiency is noted and corrected, the application is held abandoned. In those instances where authorization to charge is included, processing delays are encountered in returning the papers to the PTO Finance Branch in order to apply these charges prior to action on the cases. Authorization to charge the deposit account for any fee deficiency should be checked. See the Notice of April 7, 1986, (1065 O.G. 31-33).

6. If any additional extension and/or fee is required, charge Account No. 04-1105.

AND/OR

If any additional fee for claims is required, charge Account No. 04-1105.

David A. Tucker
SIGNATURE OF PRACTITIONER

Reg. No. 27,840

David A. Tucker
(type or print name of practitioner)
Attorney for Applicant

Tel. No. (617) 517-5508

Edwards & Angell, LLP
P.O. Box 9169
P.O. Address

Customer No. 21874

Boston, MA 02209

335574

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IN THE CLAIMS:

Please amend Claims so as to read as follows:

1. (As originally filed) A liquid crystal display device, comprising:
 - a liquid crystal panel including a liquid crystal layer and an electrode for applying a voltage to the liquid crystal layer; and
 - a driving circuit for supplying a driving voltage to the liquid crystal panel, wherein
 - the liquid crystal panel exhibits, in its voltage-transmittance characteristics, an extreme transmittance at a voltage equal to or lower than a lowest gray-level voltage, and
 - the driving circuit supplies to the liquid crystal panel a predetermined driving voltage overshooting a gray-level voltage corresponding to an input image signal of a current vertical period, according to a combination of an input image signal of an immediately preceding vertical period and the input image signal of the current vertical period.
2. (As originally filed) The liquid crystal display device according to claim 1, wherein a difference in retardation of the liquid crystal panel between a state where a voltage is not applied and a state where a highest gray-level voltage is applied is 300 nm or more.

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3. (As originally filed) The liquid crystal display device according to claim 1, wherein the liquid crystal panel is a transmission-type liquid crystal panel, and the extreme transmittance provides a maximum transmittance.
4. (As originally filed) The liquid crystal display device according to claim 1, wherein a single vertical period of the input image signal corresponds to a single frame, at least two fields of the driving voltage correspond to a single frame of the input image signal, and the driving circuit supplies, at least in a first field of the driving voltage, a driving voltage overshooting a gray-level voltage corresponding to an input image signal of a current field to the liquid crystal panel.
5. (As originally filed) The liquid crystal display device according to claim 1, wherein the liquid crystal layer is a homogeneous-orientation liquid crystal layer.
6. (As originally filed) The liquid crystal display device according to claim 1, wherein the liquid crystal panel further includes a phase compensator, three principal refractive indices n_a , n_b and n_c of an index ellipsoid of the phase compensator have a relation of $n_a = n_b > n_c$, and the phase compensator is arranged so as to cancel at least a part of retardation of the liquid crystal layer.

COPY

7. (As originally filed) A liquid crystal display device, comprising:
 - a liquid crystal panel including a plurality of picture-element capacitors arranged in a matrix, and thin film transistors respectively electrically connected to the plurality of picture-element capacitors; and
 - a driving circuit for supplying a driving voltage to the liquid crystal panel, wherein
 - the liquid crystal display device updates display every vertical period by rendering the plurality of picture-element capacitors in a charged state corresponding to the input image signal,
 - each of the plurality of picture-element capacitors includes a liquid crystal capacitor formed from a corresponding picture-element electrode, a counter electrode and a liquid crystal layer provided between the picture-element electrode and the counter electrode, and
 - a storage capacitor electrically connected in parallel with the liquid crystal capacitor, a capacitance ratio of the storage capacitor to the liquid crystal capacitor being 1 or more, and
 - the picture-element capacitor retains 90% or more of a charging voltage over a single vertical period, when at least a highest gray-level voltage is applied.
8. (As originally filed) The liquid crystal display device according to claim 7, wherein the driving circuit supplies to the liquid crystal panel a predetermined driving voltage overshooting a gray-level voltage corresponding to an input image signal of a current vertical period, according to a combination of an input image signal of an immediately preceding vertical period and the input image signal of the current vertical period.

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9. (As originally filed) The liquid crystal display device according to claim 8, wherein, for the input image signal of every gray level, the driving circuit supplies to the liquid crystal panel the driving voltage overshooting the gray-level voltage corresponding to the input image signal of the current vertical period.
10. (As originally filed) The liquid crystal display device according to claim 7, wherein the liquid crystal layer of the liquid crystal panel includes a nematic liquid crystal material having a positive dielectric anisotropy, the liquid crystal layer included in each of the plurality of picture-element capacitors includes first and second regions having different orientation directions, and the liquid crystal panel further includes a pair of polarizers arranged so as to orthogonally cross each other with the liquid crystal layer interposed therebetween, and a phase compensator for compensating for a refractive index anisotropy of the liquid crystal layer in a black display state.
11. (As originally filed) The liquid crystal display device according to claim 7, wherein the liquid crystal layer is a homogeneous-orientation liquid crystal layer.
12. (As originally filed) The liquid crystal display device according to claim 11, wherein the liquid crystal panel further includes a phase compensator, three principal refractive indices na, nb and nc of an index ellipsoid of the phase compensator have a relation of na = nb > nc, and the phase compensator is arranged so as to cancel at least a part of retardation of the liquid crystal layer.

COPY

13. (New Claim) A liquid crystal display device, in which a driving circuit applies a driving voltage to a liquid crystal panel to control the transmittance of the liquid crystal panel for display, wherein:

the liquid crystal panel exhibits, in its voltage-transmittance characteristics, a maximum or minimum transmittance at a voltage lower than a lowest gray-level voltage; and
the driving circuit selectively supplies to the liquid crystal panel as a predetermined driving voltage corresponding to an input image signal of a current vertical period, according to a combination of an input image signal of an immediately preceding vertical period and an input image signal of the current vertical period, at least a gray-level voltage which falls within a range between the lowest gray-level voltage and the highest gray-level voltage, and an overshoot gray-level voltage which is lower than the lowest gray-level voltage.

14. (New Claim) A liquid crystal display device according to claim 13, wherein:

the liquid crystal panel is a normally white mode liquid crystal panel.

15. (New Claim) A liquid crystal display device according to claim 14, wherein

the driving circuit selectively applies the gray-level voltage which falls within a range between the lowest gray-level voltage and the highest gray-level voltage, the overshoot voltage which is lower than the lowest gray-level voltage, and an overshoot gray-level voltage which is higher than the highest gray-level voltage.

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16. (New Claim) A liquid crystal display device according to claim 13, wherein:
the liquid crystal panel is a normally black mode liquid
crystal panel.

17. (New Claim) A liquid crystal display device according to claim 16, wherein
the driving circuit selectively applies the gray-level voltage which
falls within a range between the lowest gray-level voltage and the
highest gray-level voltage, the overshoot voltage which is lower
than the lowest gray-level voltage, and an overshoot gray-level
voltage which is higher than the highest gray-level voltage.

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REMARKS

This Preliminary Amendment is being filed for the purpose of adding Claims 13 – 17 prior to the initial substantive examination of this application.

All of the claims that will be pending in this application upon the entry of the foregoing Amendment are set forth above as required by the Rules.

Applicants respectfully submit that New Claims 13 - 17 do not add any new matter to this application. Further, the entry of New Claims 13 – 17 will provide what Applicants respectfully submit is a more clear, complete and appropriate range of coverage of the subject matter that Applicants regard as their invention.

Applicants respectfully submit that Claims 1 - 17 of this application, as they will stand upon the entry of the foregoing Amendment, are in condition for allowance. Entry of the foregoing Amendment, early consideration of this application and allowance of this application in response to this communication, therefore, are respectfully requested.

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Applicants also believe that additional fees beyond those submitted herewith are not required in connection with the consideration of this response to the currently outstanding Official Action. However, if for any reason a fee is required, a fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge and/or credit Deposit Account No. **04-1105**, as necessary, for the correct payment of all fees which may be due in connection with the filing and consideration of this communication.

Respectfully submitted,

Date: May 15, 2003

By: David A. Tucker

David A. Tucker
Reg. No. 27,840
Attorney for Applicant(s)

EDWARDS & ANGELL, LLP
P.O. Box 9169
Boston, Massachusetts 02209
(617-517-5508)

COPY

Attorney's Docket No. 55750 (45672)
PATENT



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Takako Adachi, et al.
Application No.: 09/820,021 Group: 2674
Filed: March 28, 2001 Examiner: Zamani, Ali A.

For: LIQUID CRYSTAL DISPLAY DEVICE

**Mail Stop: office of Petitions
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450**

CERTIFICATE OF EXPRESS MAILING UNDER 37 C.F.R. 1.10

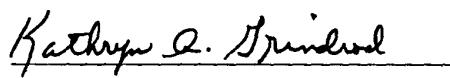
I hereby certify that the following correspondence:

Petition For Revival Of An Application For Patent Abandoned Unintentionally Under 37 CFR 1.137(b)
including its attachments

Is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service
under 37 CFR 1.10 (Express Mail Label No. EV 343733545 US), and is addressed to:

**Mail Stop: Office of Petitions
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450**

on July 18, 2003



Kathryn A. Grindrod

342021



21874

PATENT TRADEMARK OFFICE

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Attorney Docket No. 55,750 (45672)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT(S): T. Adachi, et al EXAMINER: Zamani, Ali A.

SERIAL NO.: 09/820,021 GROUP: 2674

FILED: 28 March 2001

FOR: LIQUID CRYSTAL DISPLAY DEVICE

CERTIFICATE OF EXPRESS MAILING

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service as Express Mail, Post Office to Address Service, Express Mail Label No. **EV343733545US** under 37 CFR 1.10 in an envelope addressed to Mail Stop: Office of Petitions, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on 18 July 2003.

By: Kathryn A. Grindrod
Kathryn A. Grindrod

Mail Stop: Office of Petitions
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

**SUPPLEMENTAL STATEMENT IN SUPPORT OF PETITION FOR
REVIVAL OF ABANDONED APPLICATION UNDER 37 CFR 1.137(b)**

In further support of the Petition to Revive the above-identified application under 37 CFR 1.137(b) the undersigned attorney for Applicants states as follows:

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The Notice of Abandonment in the above-identified application was issued by the United States Patent Office on 18 June 2003 on the basis that Applicants failed to respond to an Official Action dated 20 November 2002 prior to the statutory due date for the filing of such a response (i.e., 20 May 2003).

Applicants and Applicants' attorney's failure to file a timely response to the Official Action dated 20 November 2002 was unintentional throughout the entire statutory period for response.

More particularly, Applicants' attorneys, who were designated to receive correspondence from the United States Patent and Trademark Office in connection with the above-identified application, have to date not received a copy of the Official Action dated 20 November 2002 in the above-identified case. Further, Applicants' attorneys did not become aware of the existence of the Official Action of 20 November 2002 in the above-identified case until on or about 10 June 2003 in connection with the citation of the publication of this application against another application being prosecuted by this office.

At the time the Official Action of 20 November 2002 was issued, Applicants' attorney's address had changed from 130 Water Street, Boston, MA as designated in the originally filed application papers to P.O. Box 9169, 101 Federal Street, Boston, MA, and no formal change of address had yet been filed in this application. Nevertheless, as of 20 November 2002, Applicants' attorneys had in place an agreement with the United States Postal Service under which all mail addressed to their prior address was to be delivered to them at their new address. Applicants' attorneys consistently received mail directed to them by the United States Patent and Trademark Office at their former address at their new address until at least the end of December 2002, but the Official Action dated 20 November 2002 in this case was never so received.

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On 5 December 2002, Applicants' attorneys submitted to the United States Patent and Trademark Office a spreadsheet including some 24 pages detailing the patent applications and issued patents that they desired to be associated with their customer number, 21874 (see copy attached). The above-identified application is listed on page 23 of that spreadsheet as the 10th item from the top. This submission is believed to have been sufficient as a formal change of address in all of the listed cases.

Accordingly, it is respectfully submitted that Applicants' attorneys acted reasonably and properly to assure that all mail directed to them by the United States Patent and Trademark Office would either be forwarded to the by the United States Postal Service or correctly addressed by virtue of the notification document attached hereto.

Still further, attention is respectfully directed to the fact that Applicants filed a Preliminary Amendment in the above-identified case on 15 May 2003 and filed a Status Inquiry in the above-identified case on 28 May 2003. It is respectfully submitted that these filings were inconsistent with any receipt of the Official Action of 20 November 2002 in the above-identified case, and support Applicants' attorneys' statements to the effect that the Official Action of 20 November 2002 was never received. (See copies attached as part of the continuation application filed concurrently herewith)

Finally, Applicants' attorneys wish to acknowledge a series of telephone interviews conducted with the Examiner in early June of 2003 concerning the status of this application. During these interviews, Applicants' attorneys attempted to secure the re-issuance of the Official Action of 20 November 2002 by the Examiner based upon the fact that it had never been received. The result of these interviews, however, was that the Examiner after consultation with his supervisor refused Applicants' attorneys' request and indicated that a Notice of Abandonment would be issued in due course from which Applicants could petition for revival.

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It is respectfully submitted that the foregoing circumstances clearly establish the fact that the failure to respond to the Official Action of 20 November 2002 in this application was unintentional for the entire statutory period for response and that Applicants by the filing of the attached Petition and Continuation Application have acted diligently to correct to unintended basis for the presently outstanding holding of abandonment.

Revival of this application at least for the purpose of allowing the filing of the attached continuation application during the pendency of the above-identified application is therefore respectfully requested.

COPY

Applicants also believe that additional fees beyond those submitted herewith are not required in connection with the consideration of this submission. However, if for any reason a fee is required, a fee paid is inadequate or credit is owed for any excess fee paid, you are hereby authorized and requested to charge and/or credit Deposit Account No. **04-1105**, as necessary, for the correct payment of all fees which may be due in connection with the filing and consideration of this communication.

Respectfully submitted,

Date: July 18, 2003

By: David A. Tucker

David A. Tucker
Reg. No. 27,840
Attorney for Applicant(s)

EDWARDS & ANGELL, LLP
P.O. Box 9169
Boston, Massachusetts 02209
(617-517-5508)
341954



21874

PATENT TRADEMARK OFFICE

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Edwards & Angel, LLP
P.O. Box 9169



5145556	0761418	090892	0311991	130 WATER ST., BOSTON, MA 02109, US	ROBERT M. ASHER, DIKE, BRONSTEIN, ROBERTS & CO., ESQ.	Yes
5150206	0764373	0922992	0112291	130 WATER ST., BOSTON, MA 02109, US	ROBERT F. O'CONNELL, ESQ., DIKE, BRONSTEIN,	Yes
5153715	0746444	011392	0112290	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN,	Yes
5158986	07682116	102792	040591	130 WATER ST., BOSTON, MA 02109, US	ROBERT F. O'CONNELL, DIKE, BRONSTEIN,	Yes
5167407	07686827	1261182	050791	130 WATER ST., BOSTON, MA 02109, US	ATTN: DAVID G. CONLIN, DIKE, BRONSTEIN,	Yes
5179602	07724752	0112293	070291	130 WATER ST., BOSTON, MA 02109, US	ROBERT F. O'CONNELL, ESQ., DIKE, BRONSTEIN,	Yes
5181709	07627208	012693	0312091	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN ET AL.,	Yes
5181710	0762854	012693	0312091	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN ET AL.,	Yes
5190276	07668259	0312093	0311291	130 WATER ST., BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, DAVID ATTN: DONALD BROWN, ESQ., DIKE, BRONSTEIN,	Yes
5190113	07679086	0323193	052891	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
519406	07704347	0323193	0512391	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5202165	071569148	0411393	0811780	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5202352	07740849	011393	0810691	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5202639	07839735	0411393	0211992	130 WATER ST., BOSTON, MA 02109, US	ROBERT F. O'CONNELL, DIKE, BRONSTEIN,	Yes
5207678	07817659	050493	0110792	130 WATER ST., BOSTON, MA 02109, US	DONALD BROWN, DIKE, BRONSTEIN, ROBERTS &	Yes
5210486	07755673	0511193	0906931	130 WATER ST., BOSTON, MA 02109, US	ROBERT F. O'CONNELL, DIKE, BRONSTEIN, ROBERTS &	Yes
5216028	07755863	0601193	070391	130 WATER ST., BOSTON, MA 02109, US	DONALD BROWN, DIKE, BRONSTEIN, ROBERTS &	Yes
5216470	07664057	0610193	0310493	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5219148	07653404	0611593	020891	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5250556	07830412	100593	0207492	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5252196	071803281	1011293	120591	130 WATER ST., BOSTON, MA 02109, US	ROBERT L. GOLDBERG, DIKE, BRONSTEIN,	Yes
5252527	077633827	1110293	0912391	130 WATER ST., BOSTON, MA 02109, US	ROBERT L. GOLDBERG, DIKE, BRONSTEIN,	Yes
5260553	07886129	1110993	0512092	130 WATER ST., BOSTON, MA 02109, US	ROBERT F. O'CONNELL, DIKE, BRONSTEIN, ROBERTS &	Yes
5267066	07858137	1113093	0326932	130 WATER ST., BOSTON, MA 02109, US	ROBERT F. O'CONNELL, DIKE, BRONSTEIN, ROBERTS &	Yes
5269016	07566800	1210793	0612490	130 WATER ST., BOSTON, MA 02109, US	ROBERT F. O'CONNELL, DIKE, BRONSTEIN, ROBERTS &	Yes
5274483	07820273	1228193	0111492	130 WATER ST., BOSTON, MA 02109, US	ATTN: DAVID G. CONLIN, DIKE, BRONSTEIN,	Yes
5287985	07870516	022694	0411692	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5288722	07762658	0222194	0911991	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5289173	07767158	0222194	0912791	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5310162	07785324	0511094	1112291	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5312840	08023880	0511794	0202593	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5313196	07757333	0511794	0911091	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5318631	07809979	0607974	1211891	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5324651	07945739	0622194	0911692	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5341231	07984937	0812397	1203192	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5362793	08132536	1110794	1010693	130 WATER ST., BOSTON, MA 02109, US	PETER J. MANUS, ESQ., DIKE, BRONSTEIN,	Yes
5378669	07772529	0107395	1010791	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5392059	07833168	0511392	0211091	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5402142	07934369	0322895	0812192	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5403855	07988270	0411195	1012692	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5433986	08254833	080895	0410694	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5486503	08256699	0426694	0410694	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5521069	08076011	0528196	0611193	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5521296	07739211	052896	0801191	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5522158	08476430	050396	0610795	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5511956	07980655	0311897	1112492	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5532739	08984311	0811099	1210397	130 WATER ST., BOSTON, MA 02109, US	GEORGE W. NEUNER, DIKE, BRONSTEIN, ROBERTS &	Yes
6017854	07940123	0112500	0803192	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5327798	08105447	0822795	0811293	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5602037	08269194	0211197	06130194	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5372318	08020292	080696	0512394	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
4981950	07249429	0112688	0112688	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5041113	07552716	0812091	0711690	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5046851	07411461	0811091	0811589	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5054656	07424133	1010893	1011988	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes
5155476	07638081	101392	0110791	130 WATER ST., BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &	Yes

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5182195	07269140	012693	1109/58	130 WATER ST., BOSTON MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5209734	07576455	0571193	09/17/90	130 WATER ST., BOSTON MA 02109, US	ATTN: DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5321502	07821221	070594	01/16/92	130 WATER STREET	GEORGE W. NEUNER, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
4701086	06815373	110387	12/31/85	130 WATER STREET	Peter F. Corless, EDWARDS & ANGELL, LLP	Yes
5215878	10219245	0811502	08/11/90	130 Water Street, Boston, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
	07808070	0601093	12/10/91	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP	Yes
	10041068	1101001	11/01/01	130 Water Street, Boston, MA 02103, US	Dike, Bronstein, Roberts & Cushman LLP	Yes
6431733	28050657	1011000	07/14/98	130 WATER STREET, BOSTON, MA 02109, US	ERNEST V. LINEK, DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
4822348	07049613	0417899	04/17/98	130 WATER STREET, BOSTON, MA 02109, US	ROBERT F. O'CONNELL, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
4835659	07053001	0617399	06/17/97	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
4847052	07031439	0711189	03/26/87	130 WATER STREET, BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
4876331	10723061	1024698	01/01/98	130 WATER STREET, BOSTON, MA 02109, US	ATTN: DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
4803125	07134774	022090	12/16/87	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
4917670	07171985	0417790	03/20/88	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
4917773	06885380	0417790	04/24/86	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
4925710	07175975	0515908	03/17/88	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
4935574	07141689	0626890	12/30/87	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
4942883	07102540	0724950	09/29/87	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
4947187	07298690	0607790	01/18/99	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
4952286	07153366	082890	02/08/88	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
4960669	07449283	1002950	12/05/98	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
4988162	07363459	110690	06/06/87	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
4977442	07098710	112790	09/21/87	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
4983492	07102540	0724950	09/29/87	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
4991155	07495891	020591	03/19/90	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
4992335	07431562	021191	11/03/98	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5002017	07355760	032691	05/22/89	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5004525	07438020	040291	11/26/89	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5007990	07153357	0417691	02/08/88	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5008286	07401612	0416169	09/28/89	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5008179	07464222	0416169	01/12/90	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5011834	07337658	04303091	04/14/99	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5012953	07420606	0507791	11/21/88	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5017057	07520147	0521191	08/20/90	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5017742	07363247	0521191	07/19/88	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5025251	07464191	0611891	01/16/90	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5028909	07362109	0625091	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes	
5028621	07181210	070291	04/13/88	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5028628	07421453	070291	10/13/88	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5039689	07433484	0811391	11/08/89	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5040765	07525123	082091	05/17/90	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5042829	07406055	082791	09/05/89	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5042982	07328073	082791	02/21/89	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5045455	07434545	090391	11/09/89	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5046447	07151032	091091	08/22/90	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5049491	07122985	0911791	11/19/87	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5049671	07455538	0911791	12/22/89	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5049848	07442154	0911791	11/29/88	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5051154	07413181	0924919	01/29/90	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5053418	07449485	100291	12/11/89	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5055692	07498418	100891	03/26/90	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5056292	07521433	101591	05/10/90	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5057941	07534044	101591	05/06/90	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5058181	07604928	102291	10/29/90	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes
5069393	07557623	110591	07/24/90	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US	Yes

ROBERT L. GOLDBERG, ESQ., DIKE, BRONSTEIN, ROBERTS & PFUND, BOSTON, MA 02109, US

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50655.17	07533536	111291	060590	130 WATER STREET, BOSTON, MA 02109, US
50650.13	07471639	112691	072950	130 WATER STREET, BOSTON, MA 02109, US
50661.43	07216293	112691	113506	130 WATER STREET, BOSTON, MA 02109, US
50701.06	07652468	1210391	020791	130 WATER STREET, BOSTON, MA 02109, US
507360	07626689	120391	122190	130 WATER STREET, BOSTON, MA 02109, US
507755	07626689	1213191	1220790	130 WATER STREET, BOSTON, MA 02109, US
507668	07442997	010792	112691	130 WATER STREET, BOSTON, MA 02109, US
5079131	07633992	010792	0211191	130 WATER STREET, BOSTON, MA 02109, US
5079235	07465552	010792	011690	130 WATER STREET, BOSTON, MA 02109, US
5082697	07411668	0121192	052589	130 WATER STREET, BOSTON, MA 02109, US
5084302	07530312	012892	052990	130 WATER STREET, BOSTON, MA 02109, US
5084725	076262718	012892	102490	130 WATER STREET, BOSTON, MA 02109, US
5089247	07547430	020792	052890	130 WATER STREET, BOSTON, MA 02109, US
5089500	07637260	021292	050891	130 WATER STREET, BOSTON, MA 02109, US
5091369	07455138	022592	121190	130 WATER STREET, BOSTON, MA 02109, US
5091444	07478664	022592	0211290	130 WATER STREET, BOSTON, MA 02109, US
5092867	07465390	030392	031290	130 WATER STREET, BOSTON, MA 02109, US
5094875	07496126	031092	031990	130 WATER STREET, BOSTON, MA 02109, US
5099225	075454759	031092	0627190	130 WATER STREET, BOSTON, MA 02109, US
5099518	07674435	031092	032291	130 WATER STREET, BOSTON, MA 02109, US
5099530	07533613	031092	0630590	130 WATER STREET, BOSTON, MA 02109, US
509895	07672734	0317192	0321191	130 WATER STREET, BOSTON, MA 02109, US
5097287	07595294	0317192	0617190	130 WATER STREET, BOSTON, MA 02109, US
5099273	07615298	0324912	032691	130 WATER STREET, BOSTON, MA 02109, US
5100832	07492931	031990	031990	130 WATER STREET, BOSTON, MA 02109, US
510505	07515068	0411492	0633090	130 WATER STREET, BOSTON, MA 02109, US
5104870	07686367	0411492	040291	130 WATER STREET, BOSTON, MA 02109, US
5104897	07753364	0411492	0622891	130 WATER STREET, BOSTON, MA 02109, US
5105355	07534181	0411492	0665690	130 WATER STREET, BOSTON, MA 02109, US
5106603	07621598	0421192	120390	130 WATER STREET, BOSTON, MA 02109, US
5106844	07607548	0421192	0110190	130 WATER STREET, BOSTON, MA 02109, US
5106949	07407455	0421192	0911598	130 WATER STREET, BOSTON, MA 02109, US
5108064	07609889	04282912	110690	130 WATER STREET, BOSTON, MA 02109, US
5108650	07594972	0428292	101090	130 WATER STREET, BOSTON, MA 02109, US
5109120	07384707	0428292	0609189	130 WATER STREET, BOSTON, MA 02109, US
5109786	07633241	051292	122190	130 WATER STREET, BOSTON, MA 02109, US
5112434	07672402	051292	032091	130 WATER STREET, BOSTON, MA 02109, US
5116069	07527634	051292	052190	130 WATER STREET, BOSTON, MA 02109, US
5112835	07449930	051292	1112189	130 WATER STREET, BOSTON, MA 02109, US
5120065	07653068	050992	0208191	130 WATER STREET, BOSTON, MA 02109, US
5120578	07731352	060992	012191	130 WATER STREET, BOSTON, MA 02109, US
5121114	07529873	060992	052990	130 WATER STREET, BOSTON, MA 02109, US
5121609	07527634	051292	0123591	130 WATER STREET, BOSTON, MA 02109, US
5126830	07664472	0171492	0222791	130 WATER STREET, BOSTON, MA 02109, US
5130414	07661121	0171492	022091	130 WATER STREET, BOSTON, MA 02109, US
5135783	07456571	0804192	1222989	130 WATER STREET, BOSTON, MA 02109, US
513803	07498899	0804192	0327970	130 WATER STREET, BOSTON, MA 02109, US
5138303	07436558	0811192	1171498	130 WATER STREET, BOSTON, MA 02109, US
5142026	073436745	082592	0503189	130 WATER STREET, BOSTON, MA 02109, US
514546	07781306	0808192	102591	130 WATER STREET, BOSTON, MA 02109, US
5148497	07372202	082292	062689	130 WATER STREET, BOSTON, MA 02109, US
5151214	07593999	06229192	1004190	130 WATER STREET, BOSTON, MA 02109, US
5153338	07563733	1006192	0803090	130 WATER STREET, BOSTON, MA 02109, US
5156876	07631020	1027792	121190	130 WATER STREET, BOSTON, MA 02109, US
5158860	07607711	1027792	1107190	130 WATER STREET, BOSTON, MA 02109, US
5169660	07698888	1103192	051491	130 WATER STREET, BOSTON, MA 02109, US

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5161105	07564329	110392	0621790	130 WATER STREET, BOSTON, MA 02109, US
5161873	07841367	111092	022592	130 WATER STREET, BOSTON, MA 02109, US
5162796	07619339	111092	1128290	130 WATER STREET, BOSTON, MA 02109, US
5164276	07621517	111792	020390	130 WATER STREET, BOSTON, MA 02109, US
5164410	07744346	111792	0617391	130 WATER STREET, BOSTON, MA 02109, US
5164485	07564748	111792	070390	130 WATER STREET, BOSTON, MA 02109, US
5166731	07656434	121292	021291	130 WATER STREET, BOSTON, MA 02109, US
5168811	07611146	1124192	0174591	130 WATER STREET, BOSTON, MA 02109, US
5170270	07574485	120892	0828790	130 WATER STREET, BOSTON, MA 02109, US
5171736	07742186	121192	101689	130 WATER STREET, BOSTON, MA 02109, US
517813	0783561	121292	0036192	130 WATER STREET, BOSTON, MA 02109, US
5178579	07750590	122929	082891	130 WATER STREET, BOSTON, MA 02109, US
5173119	07758829	122929	0917191	130 WATER STREET, BOSTON, MA 02109, US
5175793	07473328	122929	0173190	130 WATER STREET, BOSTON, MA 02109, US
5175727	07635118	010593	122170	130 WATER STREET, BOSTON, MA 02109, US
5177539	07711698	010593	101691	130 WATER STREET, BOSTON, MA 02109, US
5176956	07416353	011293	100389	130 WATER STREET, BOSTON, MA 02109, US
5179866	07602458	011293	0619192	130 WATER STREET, BOSTON, MA 02109, US
5181706	07672652	012093	0320191	130 WATER STREET, BOSTON, MA 02109, US
5183196	07535573	020293	060590	130 WATER STREET, BOSTON, MA 02109, US
5184812	076637329	020593	050691	130 WATER STREET, BOSTON, MA 02109, US
5192624	07604581	012093	0729590	130 WATER STREET, BOSTON, MA 02109, US
5193020	07620104	030693	0328950	130 WATER STREET, BOSTON, MA 02109, US
5194488	07758976	0311693	0910191	130 WATER STREET, BOSTON, MA 02109, US
5198150	07523391	0311693	0515190	130 WATER STREET, BOSTON, MA 02109, US
5199542	07650105	0313093	0619190	130 WATER STREET, BOSTON, MA 02109, US
5200763	07750575	040693	082891	130 WATER STREET, BOSTON, MA 02109, US
5201852	07885725	0411393	0519192	130 WATER STREET, BOSTON, MA 02109, US
5202222	07653390	0411393	03010191	130 WATER STREET, BOSTON, MA 02109, US
5203435	07484901	042093	030693	130 WATER STREET, BOSTON, MA 02109, US
5203780	07751190	0412093	082991	130 WATER STREET, BOSTON, MA 02109, US
5204724	07745492	042093	0814191	130 WATER STREET, BOSTON, MA 02109, US
5206434	07760562	06010193	092791	130 WATER STREET, BOSTON, MA 02109, US
5206634	07767134	042793	042793	130 WATER STREET, BOSTON, MA 02109, US
5207988	07719976	050693	0623191	130 WATER STREET, BOSTON, MA 02109, US
5207992	07689333	050693	042291	130 WATER STREET, BOSTON, MA 02109, US
5210029	07763293	0511193	020692	130 WATER STREET, BOSTON, MA 02109, US
5216111	07600562	06010193	102290	130 WATER STREET, BOSTON, MA 02109, US
5216414	07758933	06010193	091691	130 WATER STREET, BOSTON, MA 02109, US
5216414	07761161	06010193	1115190	130 WATER STREET, BOSTON, MA 02109, US
5219855	0763937	0611593	021192	130 WATER STREET, BOSTON, MA 02109, US
5223118	076869798	0629593	030691	130 WATER STREET, BOSTON, MA 02109, US
5223516	07768482	06129593	110691	130 WATER STREET, BOSTON, MA 02109, US
5223516	07619880	070693	112890	130 WATER STREET, BOSTON, MA 02109, US
5225584	07600793	070693	040391	130 WATER STREET, BOSTON, MA 02109, US
5229395	07911352	070693	070692	130 WATER STREET, BOSTON, MA 02109, US
5233449	07787000	080293	100291	130 WATER STREET, BOSTON, MA 02109, US
5235130	07948138	081093	091692	130 WATER STREET, BOSTON, MA 02109, US
5237439	07954724	0811793	0953092	130 WATER STREET, BOSTON, MA 02109, US
5238350	07978874	0822493	112191	130 WATER STREET, BOSTON, MA 02109, US
5239681	07986323	122192	130 WATER STREET, BOSTON, MA 02109, US	
5239805	07935619	0813193	082692	130 WATER STREET, BOSTON, MA 02109, US
5243434	07654398	0910793	0221291	130 WATER STREET, BOSTON, MA 02109, US
5243434	07768876	0911493	082691	130 WATER STREET, BOSTON, MA 02109, US
5247332	07766801	0921193	110791	130 WATER STREET, BOSTON, MA 02109, US

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5246599	07/482266	09/28/93	02/27/90	130 WATER STREET, BOSTON, MA 02109, US	ATTN: DAVID G. CONLIN, DIKE, BRONSTEIN,
5250296	07/803680	10/05/93	11/27/91	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESO, DIKE, BRONSTEIN,
5250393	07/980405	10/17/93	11/17/892	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESO, DIKE, BRONSTEIN,
5254165	07/056768	10/26/93	04/06/90	130 WATER STREET, BOSTON, MA 02109, US	ROBERT F. O'CONNELL, DIKE, BRONSTEIN,
5256418	07/675306	11/09/93	03/26/91	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESO, DIKE, BRONSTEIN,
5260120	07/889377	11/16/93	12/17/92	130 WATER STREET, BOSTON, MA 02109, US	ROBERT F. O'CONNELL, ESO, DIKE, BRONSTEIN,
5262041	07/863343	11/16/93	04/07/92	130 WATER STREET, BOSTON, MA 02109, US	ROBERT L. GOLDBERG, DIKE, BRONSTEIN,
5262280	07/555451	11/16/93	10/11/90	130 WATER STREET, BOSTON, MA 02109, US	ROBERT L. GOLDBERG, DIKE, BRONSTEIN,
5262303	07/555451	11/16/93	03/04/91	130 WATER STREET, BOSTON, MA 02109, US	LINDA M. BUCKLEY, ESO, DIKE, BRONSTEIN,
5262668	07/663134	11/16/93	03/04/91	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &
5262856	07/883454	11/16/93	06/07/90	130 WATER STREET, BOSTON, MA 02109, US	ROBERT F. O'CONNELL, ESO, DIKE, BRONSTEIN,
5263333	07/544836	11/16/93	06/27/90	130 WATER STREET, BOSTON, MA 02109, US	GEORGE W. NEUNER, ESO, DIKE, BRONSTEIN,
5262821	07/839288	12/10/93	02/20/92	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS
5271867	07/627257	12/12/93	01/17/92	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS
5276480	07/880832	01/04/94	05/17/92	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESO, DIKE, BRONSTEIN, ROBERTS &
5283477	07/851237	02/01/94	03/13/92	130 WATER STREET, BOSTON, MA 02109, US	ROBERT M. ASHER, DIKE, BRONSTEIN, ROBERTS &
5285240	07/885487	02/08/94	05/11/92	130 WATER STREET, BOSTON, MA 02109, US	ATTN: DAVID G. CONLIN DIKE, BRONSTEIN,
5286977	07/798769	02/15/94	11/27/91	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESO, DIKE, BRONSTEIN,
5287145	08/056523	02/15/94	04/07/93	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS
5290807	07/917827	03/01/94	07/21/92	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESO, DIKE, BRONSTEIN, ROBERTS
52911323	07/758922	03/01/94	09/30/91	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS
5296063	07/944008	03/12/94	09/11/92	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESO, DIKE, BRONSTEIN,
5308539	07/822629	03/03/94	01/17/92	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESO, DIKE, BRONSTEIN,
5309005	07/994934	03/03/94	01/22/92	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESO, DIKE, BRONSTEIN,
5312098	08/025098	03/17/94	03/20/93	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESO, DIKE, BRONSTEIN,
5312334	08/001112	03/17/94	01/05/93	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESO, DIKE, BRONSTEIN,
5312928	07/654104	05/17/94	02/11/91	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &
5312944	07/995987	05/17/94	12/24/92	130 WATER STREET, BOSTON, MA 02109, US	ROBERT F. O'CONNELL, DIKE, BRONSTEIN,
5314055	07/935644	05/24/94	08/25/92	130 WATER STREET, BOSTON, MA 02109, US	ATTN: DAVID G. CONLIN ESO, DIKE, BRONSTEIN,
5314789	07/770016	05/24/94	01/21/91	130 WATER STREET, BOSTON, MA 02109, US	ROBERT G. CONLIN, ESO, DIKE, BRONSTEIN,
5316883	07/873692	05/31/94	04/12/92	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESO, DIKE, BRONSTEIN,
5319874	07/847417	06/07/94	03/05/92	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &
5321970	07/964079	10/20/94	02/12/92	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESO, DIKE, BRONSTEIN, ROBERTS &
5322050	07/989821	06/14/94	01/26/93	130 WATER STREET, BOSTON, MA 02109, US	PETER J. MANUS, DIKE, BRONSTEIN, ROBERTS, &
5322686	07/980443	07/05/94	06/04/92	130 WATER STREET, BOSTON, MA 02109, US	ROBERT L. GOIDBERG, DIKE, BRONSTEIN,
5324229	07/822845	07/11/94	02/11/92	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESO, DIKE, BRONSTEIN,
5332843	07/917489	07/26/94	07/12/92	130 WATER STREET, BOSTON, MA 02109, US	DONALD BROWN, DIKE, BRONSTEIN, ROBERTS &
5334356	07/934570	08/02/94	08/24/92	130 WATER STREET, BOSTON, MA 02109, US	GEORGE W. NEUNER, ESO, DIKE, BRONSTEIN,
5335930	07/986851	08/09/94	12/04/92	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS,
5335988	08/015456	08/10/94	11/13/92	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESO, DIKE, BRONSTEIN,
5342259	07/99693	08/30/94	08/30/94	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ROBERTS &
5344947	08/005938	09/06/94	01/11/93	130 WATER STREET, BOSTON, MA 02109, US	DONALD BROWN, DIKE, BRONSTEIN, ROBERTS &
5344969	07/934570	08/02/94	08/24/92	130 WATER STREET, BOSTON, MA 02109, US	GEORGE W. NEUNER, ESO, DIKE, BRONSTEIN,
5345769	07/917529	08/11/94	11/17/92	130 WATER STREET, BOSTON, MA 02109, US	ROBERT F. O'CONNELL, DIKE, BRONSTEIN,
5347343	08/088766	09/11/94	07/08/93	130 WATER STREET, BOSTON, MA 02109, US	ROBERT F. O'CONNELL, DIKE, BRONSTEIN,
5350537	07/927606	08/27/94	08/11/92	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, DIKE, BRONSTEIN, ET AL.
5350537	08/163600	10/04/94	12/07/93	130 WATER STREET, BOSTON, MA 02109, US	ATTN: DAVID G. CONLIN ESO, DIKE, BRONSTEIN,
5353221	07/19223	07/10/94	01/11/92	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESO, DIKE, BRONSTEIN,
5354497	08/019269	10/11/94	04/01/93	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESO, DIKE, BRONSTEIN,
5357129	08/157725	10/18/94	11/24/93	130 WATER STREET, BOSTON, MA 02109, US	ATTN: DAVID G. CONLIN, ESO, DIKE, BRONSTEIN,
5358819	08/054769	10/25/94	04/13/93	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESO, DIKE, BRONSTEIN,
5359660	08/071484	10/25/94	02/19/93	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESO, DIKE, BRONSTEIN,
5363955	08/011979	11/15/94	09/01/93	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESO, DIKE, BRONSTEIN,
5364026	07/772226	11/15/94	11/14/91	130 WATER STREET, BOSTON, MA 02109, US	HENRY D. PAHL, JR., ESO, DIKE, BRONSTEIN,
5365772	07/927173	11/17/94	08/07/92	130 WATER STREET, BOSTON, MA 02109, US	GEORGE W. NEUNER, ESO, DIKE, BRONSTEIN,
5367314	07/768724	11/22/94	02/27/91	130 WATER STREET, BOSTON, MA 02109, US	DAVID G. CONLIN, ESO, DIKE, BRONSTEIN,

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5868779	08567748	01/12/99	12/05/95	130 WATER STREET, BOSTON, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS & CUSHMAN
5868243	08929783	01/12/99	09/15/97	130 WATER STREET, BOSTON, MA 02109, US	GEORGE W NEUNER, DIKE BRONSTEIN ROBERTS
5866341	09044753	01/12/99	03/19/98	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN
5866053	08782955	01/12/99	01/13/97	130 WATER STREET, BOSTON, MA 02109, US	ERNEST V LINEK, DIKE BRONSTEIN ROBERTS AND GEORGE W NEUNER, DIKE BRONSTEIN ROBERTS
5873878	08841156	02/23/99	04/29/97	130 WATER STREET, BOSTON, MA 02109, US	PETER F CORLESS
5874247	08882877	02/23/99	06/26/97	130 WATER STREET, BOSTON, MA 02109, US	DAVID S RESNICK, DIKE BRONSTEIN ROBERTS & CUSHMAN
5874247	08863599	02/23/99	04/04/97	130 WATER STREET, BOSTON, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS & CUSHMAN
5887113	08911445	03/02/99	08/17/97	130 WATER STREET, BOSTON, MA 02109, US	GEORGE W NEUNER, DIKE BRONSTEIN ROBERTS
5882075	08860534	03/16/99	07/07/95	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS AND CUSHMAN
5882674	08685646	03/16/99	06/18/96	130 WATER STREET, BOSTON, MA 02109, US	DAVID S RESNICK, DIKE BRONSTEIN ROBERTS
5888760	08843634	03/30/99	04/10/97	130 WATER STREET, BOSTON, MA 02109, US	LINDA M BUCKLEY, DIKE BRONSTEIN ROBERTS & CUSHMAN
5891074	08869327	04/06/99	10/02/98	130 WATER STREET, BOSTON, MA 02109, US	GEORGE W NEUNER, DIKE BRONSTEIN ROBERTS
5892126	08986982	04/06/99	11/13/97	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS AND CUSHMAN
58904890	08894546	05/18/99	01/24/97	130 WATER STREET, BOSTON, MA 02109, US	GEORGE W NEUNER, DIKE BRONSTEIN ROBERTS
5890569	08767539	06/01/99	01/06/97	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN
5911697	088993813	06/15/99	12/11/97	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN
5919887	088774104	06/27/99	12/24/96	130 WATER STREET, BOSTON, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS & CUSHMAN
5922614	088899105	07/13/99	06/07/97	130 WATER STREET, BOSTON, MA 02109, US	GEORGE W NEUNER, DIKE BRONSTEIN ROBERTS & CUSHMAN
5922759	0848809	07/13/99	06/02/98	130 WATER STREET, BOSTON, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS & CUSHMAN
5932079	08956078	07/20/99	10/02/97	130 WATER STREET, BOSTON, MA 02109, US	GEORGE W NEUNER, DIKE BRONSTEIN ROBERTS & CUSHMAN
5933649	09045459	08/10/99	03/20/98	130 WATER STREET, BOSTON, MA 02109, US	HENRY D PAHL, DIKE BRONSTEIN ROBERTS & CUSHMAN
5939159	08715312	08/17/99	09/11/96	130 WATER STREET, BOSTON, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS & CUSHMAN
5940349	08984784	08/17/99	12/04/97	130 WATER STREET, BOSTON, MA 02109, US	PETER J MANUS, DIKE BRONSTEIN ROBERTS & CUSHMAN
5940417	08897159	08/17/99	07/22/97	130 WATER STREET, BOSTON, MA 02109, US	MILTON OLLI VER, DIKE BRONSTEIN ROBERTS & CUSHMAN
5941398	09115348	09/10/99	07/11/98	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN
5952079	08745562	09/14/98	08/02/98	130 WATER STREET, BOSTON, MA 02109, US	MILTON OLIVER, DIKE BRONSTEIN ROBERTS & CUSHMAN
5953924	08847751	09/12/99	03/24/98	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN
5955927	08849975	09/21/99	06/02/95	130 WATER STREET, BOSTON, MA 02109, US	PETER J MANUS, DIKE BRONSTEIN ROBERTS & CUSHMAN
5956091	08820700	09/21/99	05/11/98	130 WATER STREET, BOSTON, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS & CUSHMAN
5958547	09230361	09/28/99	12/01/98	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN
5959147	09282847	09/28/99	03/19/97	130 WATER STREET, BOSTON, MA 02109, US	MILTON OLIVER, DIKE BRONSTEIN ROBERTS & CUSHMAN
5959455	08944283	09/28/99	10/06/97	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN
5961517	089567642	10/05/99	11/25/97	130 WATER STREET, BOSTON, MA 02109, US	PETER J MANUS, DIKE BRONSTEIN ROBERTS & CUSHMAN
5964742	09088325	10/12/99	05/05/98	130 WATER STREET, BOSTON, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS & CUSHMAN
5965255	09114204	10/12/99	09/10/98	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN
5967161	091158439	10/26/99	09/21/98	130 WATER STREET, BOSTON, MA 02109, US	HENRY D PAHL, DIKE BRONSTEIN ROBERTS & CUSHMAN
5972031	089936403	10/26/99	09/25/97	130 WATER STREET, BOSTON, MA 02109, US	GEORGE W NEUNER ESQ., DIKE BRONSTEIN
5972477	089918898	10/26/99	11/26/97	130 WATER STREET, BOSTON, MA 02109, US	DAVID BRONSTEIN ROBERTS & CUSHMAN
5972928	08988262	10/26/99	12/24/97	130 WATER STREET, BOSTON, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS & CUSHMAN
5973499	091187422	11/02/99	09/04/98	130 WATER STREET, BOSTON, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS & CUSHMAN
5980887	088744882	11/09/99	11/08/96	130 WATER STREET, BOSTON, MA 02109, US	PETER J MANUS, DIKE BRONSTEIN ROBERTS & CUSHMAN
5981197	090027655	11/09/99	05/07/98	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN
5988665	08814806	11/16/99	03/17/98	130 WATER STREET, BOSTON, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS & CUSHMAN
5989072	08755937	11/16/99	02/05/97	130 WATER STREET, BOSTON, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS AND CUSHMAN
5989290	08982988	11/23/99	11/24/97	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN
5991755	090127939	11/23/99	03/11/98	130 WATER STREET, BOSTON, MA 02109, US	ERNEST V LINEK, DIKE BRONSTEIN ROBERTS & CUSHMAN
5995361	08781393	11/30/99	02/22/99	130 WATER STREET, BOSTON, MA 02109, US	LINDA M BUCKLEY, DIKE BRONSTEIN ROBERTS & CUSHMAN
5997498	090749560	12/07/99	05/07/98	130 WATER STREET, BOSTON, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS & CUSHMAN
6001575	09005632	12/14/99	03/19/98	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN
6002011	09099599	12/14/99	01/18/98	130 WATER STREET, BOSTON, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS & CUSHMAN
6002029	08986881	12/14/99	12/08/97	130 WATER STREET, BOSTON, MA 02109, US	PETER F CORLESS, ESO, DIKE BRONSTEIN ROBERTS & CUSHMAN
6002317	080599451	12/14/99	04/11/98	130 WATER STREET, BOSTON, MA 02109, US	JOHN L WELCH, DIKE BRONSTEIN ROBERTS & CUSHMAN
6005539	088717411	12/21/99	08/25/97	130 WATER STREET, BOSTON, MA 02109, US	MILTON OLIVER, DIKE BRONSTEIN ROBERTS & CUSHMAN
6011596	08871925	01/04/00	06/11/97	130 WATER STREET, BOSTON, MA 02109, US	GEORGE W NEUNER, DIKE BRONSTEIN ROBERTS & CUSHMAN
6013762	089049813	01/11/00	03/27/98	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN

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6013784	08902253	01/11/00	07/27/97	130 WATER STREET, BOSTON, MA 02109 US	DIKE BRONSTEIN, ROBERT & CUSHMAN
6015552	08910693	01/18/00	08/13/97	130 WATER STREET, BOSTON, MA 02109 US	GEORGE W NEUNER, DIKE BRONSTEIN ROBERTS
6017588	08903075	01/25/00	02/25/98	130 WATER STREET, BOSTON, MA 02109 US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS &
6017910	08945726	01/25/00	05/27/95	130 WATER STREET, BOSTON, MA 02109 US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS &
6022533	08900314	02/08/00	01/30/98	130 WATER STREET, BOSTON, MA 02109 US	DIKE BRONSTEIN, ROBERTS & CUSHMAN
6025355	08858399	02/15/00	05/19/97	130 WATER STREET, BOSTON, MA 02109 US	DAVID G COLIN, DIKE BRONSTEIN ROBERTS AND
6025457	08904456	02/15/00	05/19/98	130 WATER STREET, BOSTON, MA 02109 US	DIKE BRONSTEIN ROBERTS & CSHMAN
6025467	08902290	02/15/00	05/13/98	130 WATER STREET, BOSTON, MA 02109 US	GEORGE W NEUNER, DIKE BRONSTEIN ROBERTS
6034217	08928917	03/07/00	05/12/97	130 WATER STREET, BOSTON, MA 02109 US	DIKE BRONSTEIN ROBERTS & CUSHMAN
6042774	08901516	02/28/00	01/29/98	130 WATER STREET, BOSTON, MA 02109 US	DIKE BRONSTEIN ROBERTS CUSHMAN
6042776	09112108	02/04/00	01/08/98	130 WATER STREET, BOSTON, MA 02109 US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS &
6049148	09168584	02/11/00	01/02/98	130 WATER STREET, BOSTON, MA 02109 US	DIKE BRONSTEIN ROBERTS AND CUSHMAN
6051026	08907063	04/18/00	04/23/98	130 WATER STREET, BOSTON, MA 02109 US	DIKE BRONSTEIN ROBERTS & CUSHMAN
6052840	08914472	04/25/00	05/01/98	130 WATER STREET, BOSTON, MA 02109 US	DIKE BRONSTEIN ROBERTS & CUSHMAN
6053470	08925759	04/25/00	05/01/97	130 WATER STREET, BOSTON, MA 02109 US	PETER J MANUS, DIKE BRONSTEIN ROBERTS &
6057371	08984771	05/20/00	05/10/92	130 WATER STREET, BOSTON, MA 02109 US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS &
6057984	089325176	05/20/00	05/20/99	130 WATER STREET, BOSTON, MA 02109 US	DIKE BRONSTEIN ROBERTS & CUSHMAN
6058647	08872417	05/23/00	05/20/99	130 WATER STREET, BOSTON, MA 02109 US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS AND
6068990	08913739	05/30/00	05/18/98	130 WATER STREET, BOSTON, MA 02109 US	DIKE BRONSTEIN ROBERTS & CUSHMAN
6071969	084671700	06/06/00	06/05/95	130 WATER STREET, BOSTON, MA 02109 US	DIKE BRONSTEIN ROBERTS & CUSHMAN
6076572	08251601	06/20/00	02/11/99	130 WATER STREET, BOSTON, MA 02109 US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS &
6087346	08564362	07/11/00	03/21/99	130 WATER STREET, BOSTON, MA 02109 US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS AND
6110909	08943255	08/29/00	03/12/99	130 WATER STREET, BOSTON, MA 02109 US	DIKE BRONSTEIN ROBERTS & CUSHMAN
6120257	089348418	09/19/00	05/07/99	130 WATER STREET, BOSTON, MA 02109 US	DIKE BRONSTEIN ROBERTS & CUSHMAN
6097124	089956093	06/01/00	10/23/97	130 WATER STREET, BOSTON, MA 02109 US	WILLIAM J DALLEY JR, DIKE BRONSTEIN ROBERTS &
6103982	089105678	08/15/00	08/26/98	130 WATER STREET, BOSTON, MA 02109 US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS &
6106526	08771356	08/22/00	07/28/98	130 WATER STREET, BOSTON, MA 02109 US	DIKE BRONSTEIN ROBERTS & CUSHMAN
6110891	08141821	08/29/00	08/28/98	130 WATER STREET, BOSTON, MA 02109 US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS &
6111909	08943255	08/29/00	03/12/99	130 WATER STREET, BOSTON, MA 02109 US	DIKE BRONSTEIN ROBERTS & CUSHMAN
6120257	089348418	09/19/00	05/07/99	130 WATER STREET, BOSTON, MA 02109 US	DIKE BRONSTEIN ROBERTS & CUSHMAN
6121246	089545998	09/19/00	10/20/95	130 WATER STREET, BOSTON, MA 02109 US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS &
6132668	07615988	10/17/00	11/20/90	130 WATER STREET, BOSTON, MA 02109 US	DIKE BRONSTEIN ROBERTS & CUSHMAN
6132668	08736168	10/17/00	10/25/98	130 WATER STREET, BOSTON, MA 02109 US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS AND
6133502	08937327	10/17/00	03/09/98	130 WATER STREET, BOSTON, MA 02109 US	DIKE BRONSTEIN ROBERTS & CUSHMAN
6136264	089319527	10/24/00	06/04/99	130 WATER STREET, BOSTON, MA 02109 US	DIKE BRONSTEIN ROBERTS & CUSHMAN
6143791	08482984	11/07/00	09/28/99	130 WATER STREET, BOSTON, MA 02109 US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS &
6147051	08561096	11/14/00	11/14/95	130 WATER STREET, BOSTON, MA 02109 US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS &
6147063	08845871	11/14/00	06/02/95	130 WATER STREET, BOSTON, MA 02109 US	DIKE BRONSTEIN ROBERT & CUSHMAN
6147845	08287979	11/14/00	04/07/99	130 WATER STREET, BOSTON, MA 02109 US	DIKE BRONSTEIN ROBERT, DIKE BRONSTEIN ROBERTS &
6150178	082575476	11/21/00	03/24/99	130 WATER STREET, BOSTON, MA 02109 US	GEORGE W NEUNER, DIKE BRONSTEIN ROBERTS
6151363	08981312	11/21/00	07/11/97	130 WATER STREET, BOSTON, MA 02109 US	MILTON OLIVER, DIKE BRONSTEIN ROBERTS AND
6153604	08458803	11/28/00	08/02/95	130 WATER STREET, BOSTON, MA 02109 US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS &
6153168	083119616	11/28/00	08/08/99	130 WATER STREET, BOSTON, MA 02109 US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS &
6155031	08571838	12/05/00	05/7/98	130 WATER STREET, BOSTON, MA 02109 US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS &
6155031	080414122	12/05/00	05/21/98	130 WATER STREET, BOSTON, MA 02109 US	GEORGE W NEUNER, DIKE BRONSTEIN ROBERTS
6156514	08204979	12/05/00	12/03/98	130 WATER STREET, BOSTON, MA 02109 US	ROBERT L BUCHANAN, DIKE BRONSTEIN ROBERTS
6156741	08458506	12/05/00	08/02/95	130 WATER STREET, BOSTON, MA 02109 US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS AND
6159501	08951964	12/12/00	08/22/98	130 WATER STREET, BOSTON, MA 02109 US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS &
6174226	08284540	12/19/00	04/14/99	130 WATER STREET, BOSTON, MA 02109 US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS &
6165156	089947255	12/26/00	10/08/97	130 WATER STREET, BOSTON, MA 02109 US	GEORGE W NEUNER, DIKE BRONSTEIN ROBERTS
6168897	08930119	01/02/01	10/08/97	130 WATER STREET, BOSTON, MA 02109 US	GEORGE W NEUNER, DIKE BRONSTEIN ROBERTS
6174344	08223610	01/16/01	01/23/99	130 WATER STREET, BOSTON, MA 02109 US	PETER J MANUS, DIKE BRONSTEIN ROBERTS &
6174324	08462013	01/16/01	08/01/99	130 WATER STREET, BOSTON, MA 02109 US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS AND
6177492	08261250	01/23/01	03/03/99	130 WATER STREET, BOSTON, MA 02109 US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS &
6180294	089408431	01/23/01	08/29/99	130 WATER STREET, BOSTON, MA 02109 US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS &
6183949	08060774	02/06/01	04/5/98	130 WATER STREET, BOSTON, MA 02109 US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS &
619136	089186755	02/20/01	11/05/98	130 WATER STREET, BOSTON, MA 02109 US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS &

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6194224	09123376	05272701	0727798	130 WATER STREET, BOSTON, MA 02109, US	GEORGE W NEUNER, DIKE BRONSTEIN ROBERTS & CUSHMAN	Yes
6197790	05091069	03060601	0111399	130 WATER STREET, BOSTON, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS & CUSHMAN	Yes
6204278	06856244	0320101	0571997	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS AND CUSHMAN	Yes
6206701	05352599	0322701	0717399	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6207431	06182983	0327701	1030998	130 WATER STREET, BOSTON, MA 02109, US	RONALD I EISENSTEIN, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6218367	06395843	0471701	0814799	130 WATER STREET, BOSTON, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6221355	06208966	0042401	1210998	130 WATER STREET, BOSTON, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6228324	05197614	050801	1172398	130 WATER STREET, BOSTON, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS AND CUSHMAN LLP	Yes
6228896	06934031	050801	0625998	130 WATER STREET, BOSTON, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6228898	08776971	050801	0207797	130 WATER STREET, BOSTON, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6229492	05444891	050801	1172298	130 WATER STREET, BOSTON, MA 02109, US	PETER J MANUS, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6231955	059337454	0571501	0822199	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6232288	05051624	0571501	0471598	130 WATER STREET, BOSTON, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6232445	06960190	051501	1029797	130 WATER STREET, BOSTON, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6235222	059425395	0522201	1022299	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6235371	05456734	0522201	1208699	130 WATER STREET, BOSTON, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6235374	05233351	0522201	0171999	130 WATER STREET, BOSTON, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6235776	06911014	0522201	0920497	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6236568	05470066	0522201	1222999	130 WATER STREET, BOSTON, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6238065	05227743	0522901	1220998	130 WATER STREET, BOSTON, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6241774	05308556	050501	0520999	130 WATER STREET, BOSTON, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6242198	065686494	060501	0725996	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6251523	059329427	0522601	0670999	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6251861	05881878	0522601	1170999	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6251948	05468028	0522601	0606995	130 WATER STREET, BOSTON, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6255498	05173918	070301	1071698	130 WATER STREET, BOSTON, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6255967	05421208	070301	1020598	130 WATER STREET, BOSTON, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6258787	05910539	071001	0773097	130 WATER STREET, BOSTON, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6261039	059477312	0711701	0170400	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6274235	05341088	081401	0620999	130 WATER STREET, BOSTON, MA 02109, US	GEORGE W NEUNER, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6274296	05959400	081401	0670800	130 Water Street, Boston, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6276939	05955422	082101	0530000	130 Water Street, Boston, MA 02109, US	S Matthew Cairns, c/o Dike Bronstein Roberts & CUSHMAN LLP	Yes
6276764	05351119	082101	0710199	130 Water Street, Boston, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6280773	05930953	0522801	0553099	130 Water Street, Boston, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6282079	05954996	0522801	0471000	130 Water Street, Boston, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
628654	05583161	0591101	0570000	130 Water Street, Boston, MA 02109, US	David G Corless, Dike Bronstein Roberts & CUSHMAN LLP	Yes
6286717	05942216	0591101	1170299	130 Water Street, Boston, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6297375	059455703	0502001	1209999	130 Water Street, Boston, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6298880	05622119	1009001	0772700	130 Water Street, Boston, MA 02109, US	Dike Bronstein Roberts & Cushman LLP	Yes
6300157	05943245	1009001	1170299	130 Water Street, Boston, MA 02109, US	LINDA M BUCKLEY, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6306882	059547157	1023001	0471100	130 Water Street, Boston, MA 02109, US	Peter F Corless	Yes
6313343	059462527	1106001	0707100	130 Water Street, Boston, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6316198	05528115	1111301	0318000	130 Water Street, Boston, MA 02109, US	Dike Bronstein Roberts & Cushman LLP	Yes
6321985	05319314	1122701	0502099	130 Water Street, Boston, MA 02109, US	GEORGE W NEUNER, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6335507	054244587	0101702	1112499	130 Water Street, Boston, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6342028	059314441	0522777	0170899	130 Water Street, Boston, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6348593	05825582	031902	0224799	130 Water Street, Boston, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6350560	05833539	0246002	0520700	130 Water Street, Boston, MA 02109, US	S. Matthew Cairns, Dike Bronstein Roberts & CUSHMAN LLP	Yes
6352441	055556470	0305002	0530000	130 Water Street, Boston, MA 02109, US	GEORGE W NEUNER, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6332827	059083496	0205002	0807797	130 Water Street, Boston, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6353105	059314441	0305002	0571999	130 Water Street, Boston, MA 02109, US	GEORGE W NEUNER, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6338993	05825582	031902	1072299	130 Water Street, Boston, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6365148	05525534	0402002	0471400	130 Water Street, Boston, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6368713	05971708	0409002	0318199	130 Water Street, Boston, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes
6372055	05511543	0471602	022300	130 Water Street, Boston, MA 02109, US	S. Matthew Cairns, c/o Dike, Bronstein, Roberts & CUSHMAN LLP	Yes
6372560	05545593	0416002	0531100	130 Water Street, Boston, MA 02109, US	Dike Bronstein, Roberts & Cushman LLP	Yes
6379803	05230901	0473002	0203099	130 Water Street, Boston, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN LLP	Yes

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6382260	094690228	05/07/02	01/25/00	130 Water Street, Boston, MA 02109, US	S. Matthew Cairns, Dike Bronstein Roberts & Cushman
6391856	09190003	05/21/02	11/10/98	130 WATER STREET, BOSTON, MA 02109, US	GEORGE W NEUNER, DIKE BRONSTEIN ROBERTS &
6391856	095110276	05/22/02	02/24/00	130 Water Street, Boston, MA 02109, US	S. Matthew Cairns, C/o DIKE BRONSTEIN ROBERTS &
6420441	09460326	07/15/02	12/10/99	130 WATER STREET	S. MATTHEW CAIRNS, C/O DIKE BRONSTEIN
6433803	098226199	08/11/02	04/04/01	130 Water Street, Boston, MA 02109, US	Dike, Bronstein Roberts & Cushman, LLP
6446442	095226266	08/22/02	03/22/00	130 Water Street, Boston, MA 02109, US	Dike G Conlin, Dike Bronstein Roberts & Cushman LP
6455231	094431153	09/24/02	11/10/99	130 WATER STREET, BOSTON, MA 02109, US	MATTHEW CAIRNS ESQ, C/O DIKE BRONSTEIN
	09357630		02/05/90	130 WATER STREET, BOSTON, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS &
	09446230		05/11/90	130 WATER STREET, BOSTON, MA 02109, US	ROBERT F O'CONNELL, DIKE, BRONSTEIN,
	095694906		08/10/95	130 WATER STREET, BOSTON, MA 02109, US	DONALD BROWN, DIKE, BRONSTEIN, ROBERTS &
	09490515		08/21/97	130 WATER STREET, BOSTON, MA 02109, US	ROBERT L. GOLDBERG, DIKE, BRONSTEIN,
	098231155		09/10/97	130 WATER STREET, BOSTON, MA 02109, US	ATTN: DAVID G. CONLIN, DIKE BRONSTEIN,
	08957358		10/23/97	130 WATER STREET, BOSTON, MA 02109, US	ATTN: DAVID G. CONLIN, ESQ., DIKE, BRONSTEIN,
	09073505		05/05/98	130 WATER STREET, BOSTON, MA 02109, US	DONALD BROWN, DIKE BRONSTEIN ROBERTS &
	090676370		05/11/98	130 WATER STREET, BOSTON, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS &
	09102446		06/12/98	130 WATER STREET, BOSTON, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS &
	09120579		07/22/98	130 WATER STREET, BOSTON, MA 02109, US	DAVID G CONLIN, DIKE BRONSTEIN ROBERTS AND
	09155635		07/07/99	130 WATER STREET, BOSTON, MA 02109, US	PETER J MANUS, DIKE BRONSTEIN ROBERTS &
	091769028		10/10/98	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN
	09171545		07/26/99	130 WATER STREET, BOSTON, MA 02109, US	LINDA M BUCKLEY, DIKE BRONSTEIN ROBERTS &
	092393864		07/11/99	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS AND CUSHMAN
	093006539		04/27/99	130 WATER STREET, BOSTON, MA 02109, US	PETER J MANUS, DIKE BRONSTEIN ROBERTS &
	09330417		06/11/99	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN
	09347360		07/06/99	130 WATER STREET, BOSTON, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS &
	09360001		07/23/99	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN
	09372635		08/11/99	130 WATER STREET, BOSTON, MA 02109, US	PETER J MANUS, DIKE BRONSTEIN ROBERTS &
	09413763		10/07/99	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS AND CUSHMAN, LLP,
	094419354		10/11/99	130 WATER STREET, BOSTON, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS &
	094425146		10/22/99	130 WATER STREET, BOSTON, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS &
	094717829		12/23/99	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, LLP
	094959393		01/21/00	130 Water Street, Boston, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS &
	095062110		07/17/00	130 WATER STREET, BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN
	095085954		07/17/00	130 WATER STREET, BOSTON, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS &
	095237716		03/11/00	130 Water Street, Boston, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, LLP
	09537367		03/29/00	130 Water Street, Boston, MA 02109, US	Dike Bronstein Roberts
	09542419		04/04/00	130 Water Street, Boston, MA 02109, US	Linda M Buckley, Dike Bronstein Roberts & Cushman
	09546811		04/11/00	130 Water Street, Boston, MA 02109, US	Peter F Corless, Dike Bronstein Roberts & Cushman
	09547941		04/11/00	130 Water Street, Boston, MA 02109, US	Christine C O'Day
	09551985		04/19/00	130 Water Street, Boston, MA 02109, US	Dike Bronstein Roberts & Cushman LLP
	09557433		04/24/00	130 Water Street, Boston, MA 02109, US	Dike Bronstein Roberts & Cushman LLP
	09566114		04/25/00	130 Water Street, Boston, MA 02109, US	Dike Bronstein Roberts & Cushman LLP
	09563672		05/02/00	130 WATER STREET, BOSTON, MA 02109, US	Dike Bronstein Roberts & Cushman LLP
	09568106		05/11/00	130 Water Street, Boston, MA 02109, US	PETER F CORLESS, DIKE BRONSTEIN ROBERTS &
	09571119		05/11/00	130 Water Street, Boston, MA 02109, US	George W Neuner, Dike Bronstein Roberts & Cushman
	09581747		06/06/00	130 Water Street, Boston, MA 02109, US	Peter F Corless, Dike Bronstein Roberts & Cushman
	09582274		06/21/00	130 Water Street, Boston, MA 02109, US	Jennifer K Holmes, Dike Bronstein Roberts & Cushman
	09627975		07/25/00	130 Water Street, Boston, MA 02109, US	George W Neuner
	096345198		08/25/00	130 Water Street, Boston, MA 02109, US	S. Matthew Cairns, C/o Dike Bronstein Roberts &
	09648202		08/25/00	130 Water Street, Boston, MA 02109, US	Peter F Corless, Dike Bronstein Roberts & Cushman
	09661746		09/14/00	130 Water Street, Boston, MA 02109, US	EDWARDS & ANGEL, LLP, Dike Bronstein Roberts &
	09672795		09/26/00	130 Water Street, Boston, MA 02109, US	Edwards & Angel LLP

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09857398	053101	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Robert & Cushman
09859089	051601	130 Water Street, Boston, MA 02109, US	David G Comlin, Dike, Bronstein, Roberts & Cushman
09865940	062101	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09871668	053101	130 Water Street, Boston, MA 02109, US	David G Comlin, Dike, Bronstein, Roberts & Cushman
09881399	061101	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09885312	060501	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09875695	060701	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09876584	061101	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09881279	061101	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09881399	061101	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09885312	062001	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09885815	070301	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09807367	071601	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09807380	071101	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09911118	071201	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09915087	071201	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09920383	081001	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09924698	080501	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09925007	080501	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09937796	012802	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09943611	081301	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09850389	091001	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09852183	091101	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09954288	091101	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09954320	091101	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09955927	091101	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09955804	100201	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09961812	092401	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09964131	091201	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09968148	101001	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09971207	101001	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09974287	101001	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09974418	101001	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09975594	101101	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09977815	101101	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09979546	112001	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09990797	111401	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
09994024	111401	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
10000239	110701	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
10000333	107301	130 WATER STREET, BOSTON, MA 02109, US	KEVIN J FOURNIER, DIKE BRONSTEIN ROBERTS &
10002849	111501	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
10002952	111501	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
10009158	102501	130 Water Street, Boston, MA 02109, US	David G Comlin, Dike, Bronstein, Robert & Cushman
10014311	121101	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
10023062	121401	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
10030568	010502	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
10033117	102501	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
10034669	121101	130 Water Street, Boston, MA 02109, US	Peter F. Corless
10034685	122701	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
10035112	122801	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
10036184	122801	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
10037940	010402	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
10041502	010502	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
10045897	011102	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP
10061645	020702	130 Water Street, Boston, MA 02109, US	Dike, Bronstein, Roberts & Cushman, LLP

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Dike Bronstein Roberts & Cushman

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4897165	07235051	0130790	08023188	BOSTON, MA 02109, US
4895081	07118217	02271790	1106887	BOSTON, MA 02109, US
4917777	07147864	041791	0125587	BOSTON, MA 02109, US
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5030580	07575487	0707991	0808190	BOSTON, MA 02109, US
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5042481	07471408	0827191	01729790	BOSTON, MA 02109, US
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5053318	07353705	11010191	051889	BOSTON, MA 02109, US
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5084726	07628891	0102892	1214790	BOSTON, MA 02109, US
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5111384	07514701	0519792	0418890	BOSTON, MA 02109, US
5121842	07630982	061692	1202790	BOSTON, MA 02109, US
5124779	07601245	0512392	1011790	BOSTON, MA 02109, US
5126332	07354800	070792	0522789	BOSTON, MA 02109, US
5147860	07679236	05191892	04129791	BOSTON, MA 02109, US
5147864	07622177	0915792	1203190	BOSTON, MA 02109, US
5153222	07715439	1106692	061491	BOSTON, MA 02109, US
5179198	07375828	0112793	0710789	BOSTON, MA 02109, US
519176	07784579	030293	1012991	BOSTON, MA 02109, US
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5206368	07394224	0142793	08161589	BOSTON, MA 02109, US
5209753	07679085	051193	0502891	BOSTON, MA 02109, US
5213917	07815173	0519793	1212791	BOSTON, MA 02109, US
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5225695	07831209	0706893	0201792	BOSTON, MA 02109, US
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5230768	07843500	0172793	0202892	BOSTON, MA 02109, US
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5241087	0598125	08131793	1117485	BOSTON, MA 02109, US
5245877	07829460	0917493	01131792	BOSTON, MA 02109, US
5246598	07664053	09121793	0304091	BOSTON, MA 02109, US
5253163	07530826	1011293	05130790	BOSTON, MA 02109, US
5266440	08024799	1112093	0301793	BOSTON, MA 02109, US
5272337	07738317	11221793	07131791	BOSTON, MA 02109, US
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5280374	07843986	0118794	0228792	BOSTON, MA 02109, US
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5300945	07896100	04075794	0610792	BOSTON, MA 02109, US
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5306109	07938158	0426794	1113092	BOSTON, MA 02109, US
5306606	08065166	0426794	0722973	BOSTON, MA 02109, US
5310423	07918813	0510794	0772292	BOSTON, MA 02109, US
5312170	08077155	0510794	0506993	BOSTON, MA 02109, US

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531493	08011588	05/24/94	02/03/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5317430	07986721	05/31/94	12/05/92	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5321536	07989104	06/14/94	10/30/92	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS AND CUSHMAN, 130
5331625	07946934	07/19/94	09/17/92	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5336161	07983417	08/09/94	11/30/92	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5343289	080699739	08/30/94	07/30/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5352659	07837780	10/04/94	02/14/92	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5356311	08033795	10/18/94	03/25/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5357766	07849733	10/18/94	03/11/92	BOSTON, MA 02109, US	PETER F. CORLESS, 130 WATER STREET
5362600	08077654	11/08/94	05/25/93	BOSTON, MA 02109, US	ROBERT L. GOLDBERG, 130 WATER STREET
5368646	08082548	11/22/94	06/24/93	BOSTON, MA 02109, US	DONALD BROWN, 130 WATER STREET
5370880	08117985	12/06/94	09/08/93	BOSTON, MA 02109, US	DONALD BROWN, 130 WATER STREET
5371745	07525092	12/06/94	05/17/90	BOSTON, MA 02109, US	DAVID G. CONLIN, 130 WATER STREET
5376134	08175273	12/27/94	12/23/93	BOSTON, MA 02109, US	PETER F. CORLESS, 130 WATER STREET
5377889	08175273	12/27/94	09/10/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5384623	08007769	01/24/95	01/22/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5385338	080505612	01/31/95	05/03/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5385946	080447551	01/31/95	02/25/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5396960	07728595	02/28/95	09/26/91	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5396121	08139552	03/07/95	10/20/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5400048	08110859	03/21/95	08/24/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5400550	08158306	03/21/95	11/23/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5400758	08097263	03/21/95	07/23/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5404039	08072599	04/04/95	06/03/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5410239	08065610	04/25/95	05/21/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5416754	07985367	05/16/95	12/16/95	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5418547	08198465	05/23/95	02/22/94	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5422858	08067461	06/06/95	05/26/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5423610	08142184	06/13/95	10/26/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5426710	08058773	06/27/95	05/03/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5430662	08163027	07/04/95	12/05/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
54341978	08012589	08/19/95	02/03/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5440504	07823222	07/04/95	07/13/92	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5443814	08288423	07/17/95	08/10/94	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5446719	08013038	08/29/95	02/03/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5447124	08122180	09/05/95	09/27/93	BOSTON, MA 02109, US	PETER F. CORLESS, 130 WATER STREET
5441170	07747443	08/11/95	08/14/93	BOSTON, MA 02109, US	ROBERT L. GOLDBERG, 130 WATER STREET
5441967	08011289	08/19/95	02/03/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5443617	08198494	08/02/95	02/16/94	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5446719	08013038	08/29/95	02/03/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5448851	08329890	08/01/95	10/26/94	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5441170	07747443	08/11/95	08/14/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5443617	08011289	08/19/95	02/03/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5443917	08198494	08/02/95	02/16/94	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5446719	08013038	08/29/95	02/03/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5447124	08122180	09/05/95	09/27/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
54473450	080504454	12/05/95	04/27/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5448864	08060331	02/25/95	09/15/94	BOSTON, MA 02109, US	DAVID G. CONLIN, 130 WATER STREET
5481273	08273932	01/02/96	07/12/94	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5486472	07924054	01/23/96	03/15/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5486859	08147850	08/14/96	11/03/93	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5498622	02131396	08/19/94	08/19/94	BOSTON, MA 02109, US	DONALD BROWN, 130 WATER STREET
5494766	08227520	02/27/96	04/14/94	BOSTON, MA 02109, US	DAVID G. CONLIN, 130 WATER STREET
5445294	08199264	02/27/96	02/28/94	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5502482	08211779	03/26/96	04/15/94	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5527125	08211597	06/18/96	04/05/94	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5527963	08346576	06/18/96	10/16/94	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5534104	08244498	07/09/96	05/25/94	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5545165	08244497	08/13/96	05/25/94	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
5552523	08244411	08/13/96	05/24/94	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130

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5552910	08346473	090396	112994	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5567738	08319817	102296	013195	BOSTON, MA 02109, US	DIKE BROWN, 130 WATER STREET	Yes
5572132	08515483	110596	0861595	BOSTON, MA 02109, US	DIKE BRONSTEIN, ROBERTS & CUSHMAN, LLP, 130	Yes
5574195	08346605	111296	111694	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS AND CUSHMAN, 130	Yes
5582876	08357781	1241096	121694	BOSTON, MA 02109, US	DONALD BROWN, 130 WATER STREET	Yes
5582933	08259345	121096	0614794	BOSTON, MA 02109, US	GEORGE W. NEUNER, 130 WATER ST.	Yes
5583402	08452267	1217196	052695	BOSTON, MA 02109, US	DONALD BROWN, 130 WATER STREET	Yes
5594046	08403734	0114497	031595	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5598366	08445797	0204957	050495	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5608110	08299994	0226597	0801794	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5623050	07952455	0442297	081892	BOSTON, MA 02109, US	DIKE, BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5624974	08578872	042897	1227795	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5633932	08653598	0612957	1228954	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130	Yes
5641654	08081072	062497	062293	BOSTON, MA 02109, US	DAVID G. CONLIN, 130 WATER ST.	Yes
5645750	08465642	0710897	0506959	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5647931	08507516	0711597	0812295	BOSTON, MA 02109, US	DONALD BROWN, 130 WATER STREET	Yes
5663401	08637222	0910967	0424796	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
566671	08302818	0911697	0509894	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5672176	08611991	093097	0305956	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5676640	08622667	101497	0342696	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5677184	08423691	101497	041895	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5681319	08607681	102897	0212696	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5702451	08881149	1230397	122895	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5712391	08671298	0127798	0628956	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5716980	08695097	021098	0621795	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5728822	08526987	031098	0912795	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5728174	08532827	0317198	1103095	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5730925	08834171	032498	0418956	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5732274	08622008	051998	032696	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5753319	08600578	051998	030895	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS CUSHMAN, 130 WATER ST.	Yes
5768984	08571995	062398	121995	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5776727	08408522	0710798	032295	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5812206	08732886	092298	012492	BOSTON, MA 02109, US	DIKE, BRONSTIN, ROBERTS & CUSHMAN, 130	Yes
5814378	08671824	092898	0711796	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5840833	08526469	112498	0402956	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS AND CUSHMAN, 130	Yes
585407	08475557	122898	060795	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5876767	08609802	0302799	021398	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5922001	08255820	072299	0411794	BOSTON, MA 02109, US	DIKE, BRONSTIN, ROBERTS & CUSHMAN, 130	Yes
5942231	08684920	082499	061896	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5952308	07911943	0914499	072492	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS AND CUSHMAN, 130	Yes
5953491	08485352	0921799	0621795	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5962570	08764361	1021996	121396	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
5983292	08552333	110999	121476	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
598874	08620285	112398	032296	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
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6080556	08857768	0527100	030998	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130	Yes
6171576	08552584	0105001	110395	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
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6213230	07323040	031089	06289	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
6213718	07519288	0405790	070690	BOSTON, MA 02109, US	DIKE BRONSTEIN ROBERTS & CUSHMAN, 130	Yes
6214086	07569486	0710590	0509894	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130	Yes
6214193	07581193	0911290	0830591	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130	Yes
6214777	07935487	080592	0810592	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130	Yes
6214914	07927114	092492	082109	BOSTON, MA 02109, US	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130	Yes

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08027881	03/08/93	BOSTON, MA 02119, US	PETER J. MANUS, 130 WATER STREET	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
03288888	08/28/85	02/21/95	BOSTON, MA 02119, US	DONALD BROWN, ESQUIRE, 130 WATER STREET
03428817	07/88/256	12/28/93	05/14/92	DONALD BROWN, 130 WATER ST.
03460288	07/99/3280	04/12/94	05/04/92	DIKE, BRONSTEIN, ROBERTS, CUSHMAN, 130
03559201	07/24/95	12/21/94	07/02/91	DONALD BROWN, 130 WATER ST.
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34439365	08/13/263	05/09/95	10/06/93	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, 130
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45645933	06/45/2282	01/14/86	12/22/82	CUSHMAN & PFUND, 130 WATER ST., BOSTON, MA 02109,
459325	07/20/3292	07/03/90	06/07/86	CUSHMAN & PFUND, 130 WATER ST., BOSTON, MA 02109,
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5256798	06/77/4811	10/28/93	09/11/95	CUSHMAN & PFUND, 130 WATER ST., BOSTON, MA 02109,
4740073	06/60/6338	04/26/88	12/09/85	CUSHMAN & PFUND, 130 WATER STREET, BOSTON, MA 02109,
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4849350	06/78/4844	07/18/89	10/04/85	CUSHMAN, 130 WATER STREET, BOSTON, MA 02109, US
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09514063	02/25/00	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, P.O. BOX 9169, S. MATTHEW CAIRNS, C/O EDWARDS & ANGELL,		
04503693	29/13/83	11/17/00	DIKE, BRONSTEIN Roberts & Cushman, P.O. Box 9169, Peter F Corless, Edwards & Angel LLP	
09622846	09/06/152	07/10/01	DIKE, BRONSTEIN Roberts & Cushman IP Group, 130 Water Street, Peter F Corless, Edwards & Angel LLP	
09866152	09/20/00	DIKE, BRONSTEIN Roberts & Cushman IP Group, 130 Water Street; Peter F Corless, Edwards & Angel LLP		
09786309	09/05/01	DIKE, BRONSTEIN Roberts & Cushman, 130 Water Street, Boston, Peter F Corless, Edwards & Angel LLP		
09787196	04/26/01	DIKE, BRONSTEIN Roberts & Cushman, 130 Water Street, Boston, Peter F Corless, Edwards & Angel LLP		
09806003	06/15/01	DIKE, BRONSTEIN Roberts & Cushman, 130 Water Street, Boston, Peter F Corless, Edwards & Angel LLP		
09806071	06/01/01	DIKE, BRONSTEIN Roberts & Cushman, 130 Water Street, Boston, Peter F Corless, Edwards & Angel LLP		
09806093	07/13/01	DIKE, BRONSTEIN Roberts & Cushman, 130 Water Street, Boston, Peter F Corless, Edwards & Angel LLP		
09806633	09/30/01	DIKE, BRONSTEIN Roberts & Cushman, 130 Water Street, Boston, Peter F Corless, Edwards & Angel LLP		
09807215	05/12/00	DIKE, BRONSTEIN Roberts & Cushman, INTELLCETUAL, Peter F Corless, Edwards & Angel LLP		
09807237	04/10/01	DIKE, BRONSTEIN Roberts & Cushman, 130 Water Street, Boston, Peter F Corless, Edwards & Angel LLP		
09728848	12/01/00	DIKE, BRONSTEIN, Roberts & Cushman, 130 Water Street, Boston, William J. Dailey, Jr., EDWARDS & ANGELL, LLP		
09788309	02/16/01	DIKE, BRONSTEIN, Roberts & Cushman, 130 Water Street, Boston, Lisa Swiszcz Hazard, EDWARDS & ANGELL, LLP		
09782286	02/22/01	DIKE, BRONSTEIN, Roberts & Cushman, 130 Water Street, Boston, Robert L. Buchanan, EDWARDS & ANGELL, LLP		
09742494	07/05/98	DIKE, BRONSTEIN, ROBERTS & CUSHMAN, INTELLCETUAL, Peter F Corless, Edwards & Angel LLP		
04554719	09/85/771	09/24/02	S. Matthew Cairns, EDWARDS & ANGELL, LLP	

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**Practitioner's Docket No. 55,750 (45672)
PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: T. Adachi, et al.

Application No.: 09/820021 Group No.: Unassigned

Filed: March 28, 2001 Examiner: Unassigned

For: LIQUID CRYSTAL DISPLAY DEVICE

**Assistant Commissioner for Patents
Washington, D.C. 20231**

TRANSMITTAL OF CERTIFIED COPY

Attached please find the certified copy of the foreign application from which priority is claimed for this case:

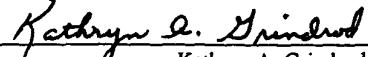
Country:	Japan	Country	Japan
Application No:	2000-091832	Application No.	2000-096765
Filing Date:	3/29/2000	Filing Date	3/31/2000
Country	Japan	Country	Japan
Application No.	2001-032773	Application No.	2001-038246
Filing Date	2/8/2001	Filing Date	2/15/2001

CERTIFICATE OF MAILING (37 C.F.R. 1.8a)

I hereby certify that this correspondence is, on the date shown below, being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Signature

Date: May 7, 2001


Kathryn A. Grindrod

T. Adachi, et al.
USSN: 09/820021
Page 2

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Customer No.: 21874

David A. Tucker
SIGNATURE OF PRACTITIONER
David A. Tucker
Reg. No. 27,840

Dike, Bronstein, Roberts & Cushman
Intellectual Property Practice Group
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P.O. Box 9169
Boston, MA 02209
Tel. No.: (617) 523-3400
164172

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This is to certify that the annexed is a true copy of the following application as filed
with this Office.

出願年月日
Date of Application:

2000年 3月29日

出願番号
Application Number:

特願2000-091832

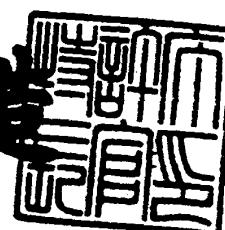
申請人
Applicant(s):

シャープ株式会社

2001年 1月12日

特許庁長官
Commissioner,
Patent Office

及川耕造



出証番号 出証特2000-3111577

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PATENT OFFICE
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This is to certify that the annexed is a true copy of the following application as filed
with this Office.

出願年月日
Date of Application:

2000年 3月31日

出願番号
Application Number:

特願2000-096765

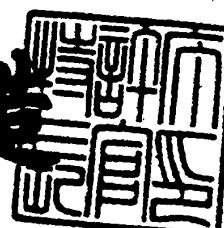
願人
Applicant(s):

シャープ株式会社

特許長官
Commissioner,
Patent Office

2001年 1月12日

及川耕造



出証番号 出証特2000-3111578

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PATENT OFFICE
JAPANESE GOVERNMENT

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This is to certify that the annexed is a true copy of the following application as filed
with this Office.

出願年月日
Date of Application:

2001年 2月 8日

願番号
Application Number:

特願2001-032773

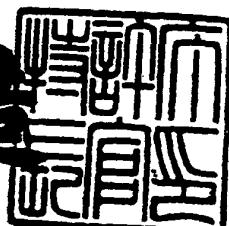
願人
Applicant(s):

シャープ株式会社

特許庁長官
Commissioner,
Patent Office

2001年 3月 9日

及川耕造



出証番号 出証特2001-3016361

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This is to certify that the annexed is a true copy of the following application as filed
with this Office.

出願年月日
Date of Application:

2001年 2月15日

出願番号
Application Number:

特願2001-038246

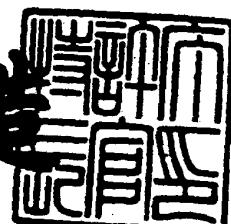
出願人
Applicant(s):

シャープ株式会社

2001年 3月16日

特許庁長官
Commissioner,
Patent Office

及川耕造



出証番号 出証特2001-3018443

COPY

Attorney Docket No. 55,750 (45672)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: T. Adachi, et al.

U.S.S.N.: Unassigned

Art Unit: Unassigned

FILED: Herewith

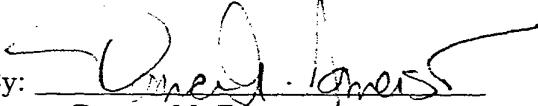
Examiner: Unassigned

FOR: LIQUID CRYSTAL DISPLAY DEVICE

.....

CERTIFICATE OF EXPRESS MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 (Express Mail Label No. EL730721694US), and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231, on March 28, 2001

By: 
Donna M. Tomase

.....

**INFORMATION DISCLOSURE STATEMENT
(SUBMISSION AFTER FILING OF AN APPLICATION
BUT BEFORE FINAL REJECTION OR NOTICE OF ALLOWANCE)**

Assistant Commissioner for Patents
Washington, D.C. 20231

Date: March 28, 2001

Sir:

Pursuant to 37 C.F.R. §§ 1.97 and 1.98, Applicant(s) hereby submit(s) an Information Disclosure Statement for consideration by the Examiner.

I. LIST OF PATENTS, PUBLICATIONS OR OTHER INFORMATION

The patents, publications or other information submitted for consideration by the Office are listed on PTO-1449, attached hereto.

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II. COPIES

a. X Submitted herewith is a legible copy of (i) each U.S and foreign patent; (ii) each publication or that portion which caused it to be listed; and (iii) all other information or that portion which caused it to be listed.

b. Each of the patents, publications or other information listed on the attached PTO-1449 was previously cited by or submitted to the USPTO in connection with U.S.S.N.: 08/000,000, to which the subject application claims the benefit of the earlier filing date. As such, a copy of each is not included herewith pursuant to 37 C.F.R. § 1.98(d).

III. CONCISE EXPLANATION OF THE RELEVANCE

(check at least one box)

a. X Except as may be indicated below in (b), all of the patents, publications or other information are in the English language or were cited in an English language Search Report, a copy of which is attached hereto (concise explanation not required).

b. X A concise explanation of the relevance of all patents, publications or other information listed that is not in the English language is as follows:

 English translation for reference(s) _____.
X English abstract for reference(s) BA.
 English translation of search report/ official communication.
 Copy of PCT/EPO Search Report.
 Reference BA also referred to in background of subject application.

c. The following additional information is provided for the Examiner's consideration:

 Copy of EPO Search Report.
 Copy of PCT Search Report.
 Copy of Official Communication from the _____ Patent Office.
 English translation of search report/ official communication.
 Copy of _____.

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FEES

IV. **THIS IDS IS BEING FILED UNDER 37 C.F.R. § 1.97(b)**
(check one box)

- a. X within three months of the filing date of a national application (37 C.F.R. § 1.97(b) (1)). No fee or certification is required.
- b. _____ within three months of the date of entry of the national stage as set forth in §1.491 in an international application (37 C.F.R. § 1.97(b) (2)). No fee or certification is required.
- c. _____ before the mailing date of a first Action on the merits (37 C.F.R. § 1.97(b) (3)). No fee or certification is required. In the event that a first Office Action on the merits has been issued, please consider this IDS under 37 C.F.R. § 1.97(c) and see the certification under 37 C.F.R. § 1.97(e) below, or, if no certification has been made, charge our deposit account a fee in the amount of \$230.00 as required by 37 C.F.R. § 1.17(p).

V. **THIS IDS IS BEING FILED UNDER 37 C.F.R. § 1.97(c):**
(check one box)

before the mailing date of a Final Office Action under 37 C.F.R. § 1.113 (See 37 C.F.R. § 1.97(c) (1)) or before the mailing date of a Notice of Allowance under 37 C.F.R. § 1.311 (See 37 C.F.R. § 1.97(e) (2)).

- a. _____ No certification; therefore, a fee in the amount of \$230.00 is required by 37 C.F.R. . § 1.17(p).
or
- b. _____ See the certification below. No fee is required.

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VI. CERTIFICATION UNDER 37 C.F.R. § 1.97(e) (check only one box)

The undersigned hereby certifies that

- a. _____ each item of information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application not more than three months prior to the filing of this IDS; or
- b. _____ no item of information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application or, to the best of my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this statement.
- c. _____ Some of the items of information were cited in a communication from a foreign Patent Office. As to this information, the undersigned certifies that each item of information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application not more than three months prior to the filing of this IDS. As to the remaining information, the undersigned hereby certifies that no item of this remaining information contained in the IDS was cited in a communication from a foreign Patent Office in a counterpart foreign application or, to the best of my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this statement.

VII. FEE PAYMENT (check one)

- ____ Enclosed please find a check in the amount of \$230.00 for the above-indicated fee.
- ____ Please charge Deposit Account No. 04-1105 in the amount of \$230.00 for the above-indicated fee.
- ____ X No fee is required.

Attorney Docket No. 55,750 (45672)
T. Adachi, et al.
Page 5

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If the Examiner has any questions concerning this IDS, he/she is requested to contact the undersigned. If it is determined that this IDS has been filed under the wrong rule, the PTO is requested to consider this IDS under the proper rule, with a petition if necessary, and charge the appropriate fee to Deposit Account No. 04-1105.

Respectfully submitted,

Date: March 28, 2001

David A. Tucker
David A. Tucker (Reg. No. 27,840)

Dike, Bronstein, Roberts & Cushman
Intellectual Property Practice Group
EDWARDS & ANGELL, LLP
130 Water Street
Boston, MA 02109
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164815

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Information Disclosure Statement PTO - 1449	Atty. Docket No. 55,750 (45672)	Serial No. Unassigned
	Applicant(s): Takako ADACHI	
	Filing Date Herewith	Art Unit Unassigned

UNITED STATES PATENT DOCUMENTS

Exam. Initials	Ref. No.	Document Number	Date	Name	Class	File Date
	AA	USSN: 09/632,878				8/4/2000

FOREIGN PATENT DOCUMENTS

Exam. Initials	Ref. No.	Document Number	Date	Country or Office	Class	
	BA	04288589 A	10/1992	JAPAN		

OTHER DOCUMENTS (INCL. TITLE, AUTHOR, DATE, PAGES, ETC)

Exam. Initials	Ref. No.	

Examiner:	Date:
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(19)



JAPANESE PATENT OFFICE

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PATENT ABSTRACTS OF JAPAN

(11) Publication number: 04288589 A

(43) Date of publication of application: 13 . 10 . 92

(51) Int. Cl

G09G 3/36
G02F 1/133
H04N 5/66

(21) Application number: 03150577

(71) Applicant: TOSHIBA CORP

(22) Date of filing: 21 . 06 . 91

(72) Inventor: OKUMURA HARUHIKO
FUJIWARA HISAO
ITAKURA TETSURO

(30) Priority: 03 . 09 . 90 JP 02232821

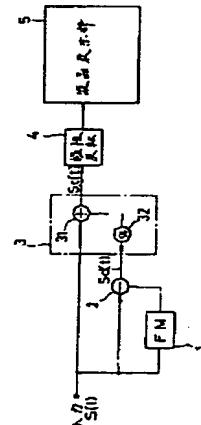
(54) LIQUID CRYSTAL DISPLAY DEVICE

(57) Abstract:

PURPOSE: To offer the liquid crystal display device equipped with a driving circuit which realize a response speed nearly as fast as or faster than that of a binary display even with a half-tone level.

CONSTITUTION: An image storage circuit 1 which holds at least one field image of an input image signal is provided, and a time base filter circuit 3 detects level variation of each picture element in the time-base direction from the image signal held in the storage circuit 1 and the input image signal and performs high-frequency emphasized filtration in the time-base direction of each picture element for the input image signal according to the detection output. Consequently, the response characteristics of the liquid crystal display device are improved, the response speed of a half-tone display is made fast, and high picture quality with a reduced after-image is obtained.

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(19) 日本国特許庁 (JP)

(12) 公開特許公報 (A)

(11)特許出願公開番号

特開平4-288589

(43) 公開日 平成4年(1992)10月13日

(51) Int.Cl.³ 識別記号 廷内整理番号 F I 技術表示箇所
 G 0 9 G 3/36 7926-5G
 G 0 2 F 1/133 5 7 5 7820-2K
 H 0 4 N 5/66 1 0 2 B 7205-5C

審査請求 未請求 請求項の数 8(全 14 頁)

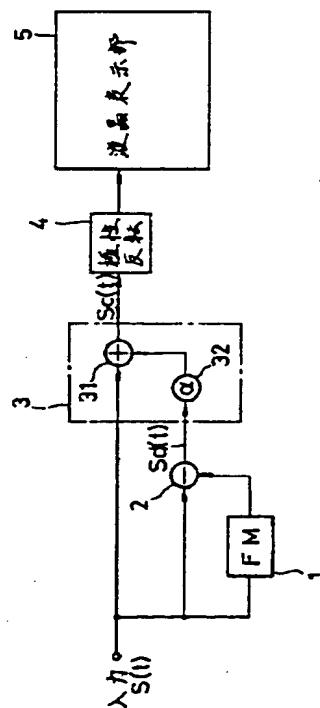
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(54) 【発明の名称】 液晶表示装置

(57) 【要約】

【目的】中間調レベルでも二値表示のみ若しくはそれ以上の応答速度を実現し得る駆動回路を備えた液晶表示装置を提供することを目的とする。

【構成】入力画像信号の少くとも一枚のフィールド画像を保持する画像用記憶回路1を備え、この記憶回路1に保持された画像信号と入力画像信号とから各画素の時間軸方向のレベル変動を検出して、その出力に応じて入力画像信号の各画素の時間軸方向に高域強調フィルタをかける時間軸フィルタ回路3を設けることにより、液晶表示装置の応答特性を改善し、特に中間調表示での応答速度を高速化して残像を低減した高画質を得る。



【特許請求の範囲】

【請求項1】入力画像信号の少くとも一枚のフィールド画像を保持する画像用記憶回路と、この記憶回路に保持された画像信号と前記入力画像信号とから各画素の時間軸方向のレベル変動を検出するレベル変動検出回路と、この検出回路の出力に応じて前記入力画像信号の各画素の時間軸方向に高域強調フィルタをかける時間軸フィルタ回路と、この時間軸フィルタ回路の出力信号が供給される液晶表示部と、を備えたことを特徴とする液晶表示装置。

【請求項2】前記時間軸フィルタ回路は、前記レベル変動検出回路の出力と前記入力画像信号の各画素の入力レベルによりフィルタ特性が変化させられる適応型フィルタ回路であることを特徴とする請求項1記載の液晶表示装置。

【請求項3】前記時間軸フィルタ回路は、前記各画素の時間軸方向のレベル変動の極性に応じて異なる特性を持つことを特徴とする請求項1記載の液晶表示装置。

【請求項4】入力画像信号の少くとも一枚のフィールド画像を保持する画像用記憶回路と、この記憶回路に保持された画像信号と前記入力画像信号とから各画素の時間軸方向のレベル変動を検出するレベル変動検出回路と、この検出回路の出力に応じて前記入力画像信号の各画素の時間軸方向に高域強調フィルタをかける時間軸フィルタ回路と、この時間軸フィルタ回路の出力信号が供給される液晶表示部と、この液晶表示部の液晶温度を検出して、その検出出力に応じて前記時間軸フィルタの特性を可変制御する液晶温度検出回路と、を備えたことを特徴とする液晶表示装置。

【請求項5】入力画像信号の少くとも一枚のフィールド画像を保持する画像用記憶回路と、この記憶回路に保持された画像信号と前記入力画像信号とから各画素の時間軸方向のレベル変動を検出するレベル変動検出回路と、前記入力画像信号の中で動いている部分を検出する動き検出回路と、前記レベル変動検出回路および動き検出回路の出力に応じて前記入力画像信号の各画素の時間軸方向に高域強調フィルタをかける時間軸フィルタ回路と、この時間軸フィルタ回路の出力信号が供給される液晶表示部と、を備えたことを特徴とする液晶表示装置。

【請求項6】入力画像信号の少くとも一枚のフィールド画像を保持する画像用記憶回路と、この記憶回路に保持された画像信号と前記入力画像信号とから各画素の時間軸方向のレベル変動を検出するレベル変動検出回路と、前記入力画像信号の中で動いている部分を検出する動き検出回路と、前記レベル変動検出回路および動き検出回路の出力に応じて前記入力画像信号の各画素の時間軸方向に高域強調フィルタをかける時間軸フィルタ回路と、この時間軸フィルタ回路の出力信号が供給される液晶表示部と、この液晶表示部の液晶温度を検出して、その検出出力に応じて前記時間軸フィルタの特性を可変制御す

る液晶温度検出回路と、を備えたことを特徴とする液晶表示装置。

【請求項7】前記液晶温度検出回路は、前記液晶表示部を複数個に分割した小画面毎に温度検出を行い、各小画面の温度検出出力により前記時間軸フィルタの特性を最適制御することを特徴とする請求項4または6に記載の液晶表示装置。

【請求項8】前記入力画像信号の雑音除去を行う雑音除去フィルタが設けられていることを特徴とする請求項10, 4, 5または6のいずれかに記載の液晶表示装置。

【発明の詳細な説明】 【発明の目的】

【0001】

【産業上の利用分野】本発明は、液晶表示装置に係り、とくに中間調表示の応答特性を考慮した駆動回路部の改良に関する。

【0002】

【従来の技術】一般に液晶の応答速度は、液晶分子が印加された電界によって立ち上がる速度 t_r と、電界を零にしたときに各分子間の力によって元の状態に復帰する速度 t_d により決まる。これらの速度 t_r , t_d は以下の式で表される。

$$t_r = \eta d^2 / (\Delta \epsilon V - K \pi^2) \quad \dots (1)$$

$$t_d = \eta d^2 / K \pi^2 \quad \dots (2)$$

【0003】ここに、Kは、液晶の発散、ねじれ、曲げの弾性定数をそれぞれ K_1 , K_2 , K_3 としたときに、 $K = K_1 + (K_3 - 2K_2) / 4$ で表される定数である。 $\Delta \epsilon$ は、液晶分子の長軸方向の誘電率 ϵ_s と短軸方向の誘電率 ϵ_p の差 $\epsilon_s - \epsilon_p$ である。 η は液晶分子のねじれ粘性、dは液晶セルの厚み(セルギャップ)、Vは印加電圧である。

【0004】(1), (2)式から明らかなように、液晶の応答速度を速めるには、 η , dを小さくするか、またはKを大きくすればよい。ただし、 η , Kは物質定数であり、dは屈折率の異方性である Δn との兼ね合いで最小透過率が決まってくるので、それ程小さくすることはできない。そこで種々の液晶物質のブレンドによって η , K, Δn 等を変化させて高速応答を実現する努力が続けられている。また、立ち上がり速度 t_r については、 $\Delta \epsilon$ またはVを変化させることにより高速化することができ、立ち下がり速度 t_d については、誘電率の異方性が低周波では正、高周波では負であることを利用して、電圧OFF時に高周波を重畠して高速化した例が知られている。

【0005】以上のような液晶応答速度の改善は、ON/OFFの二値表示の場合有効であるが、中間調表示を考慮した場合には状況は複雑になる。その事情を図面を参照して以下に説明する。

【0006】図19は電極41, 42間の一つの液晶分子43を示している。液晶分子43は、x軸に対してθ, x軸に対してφ傾いており、この状態で液晶分子4

3

3にz軸方向の電界がかかったときの流体力学方程式 *【0007】
は、 *【数1】

$$\begin{aligned} \tau_1 \cdot \partial \theta / \partial t &= f(\theta) (\partial^2 \theta / \partial z^2) \\ &+ (f(\theta) \partial \theta / \partial z) / \partial z \\ &+ g(\theta) (\partial \phi / \partial z)^2 \\ &- e(\theta) (\partial \phi / \partial z) \\ &+ h(\theta) Dz^2 / 4\pi \quad \dots (3) \end{aligned}$$

$$\tau_1 \cdot \partial \phi / \partial t = (1/\cos^2 \theta) \cdot (u(\theta)(\partial \theta / \partial z) + v(\theta)) / \partial z \quad \dots (4)$$

【0008】で記述される。上式は非線形偏微分方程式であり、解析的に解くことは出来ないが、数値計算により解くことができる。また電極間に印加される入力電圧※

※Vは、 $a = (\epsilon_s - \epsilon_p) / \epsilon_p$ として、

【0009】

【数2】

$$V = (Dz / \epsilon_p) \int_0^d dz / (1 + a \sin^2 \theta) \dots (5)$$

で表される。Dz は電束密度である。

【0010】以上の(3)～(5)式を連立して解くことにより、入力電圧変化による液晶分子の過渡応答特性を求めることができる。これらの式から、液晶分子の時間的变化量は、入力電圧に依存することが分かる。この様にして求められた液晶分子の時間的变化量 $\theta(z, t)$ および $\phi(z, t)$ を Barrman の 4×4 マトリクスに入れて解くことにより、最終的な光学応答特性を導出することができる。

【0011】一方、図20は液晶の透過率-入力電圧特性を示している。この特性から、通常、100/1のコントラスト比をとるためには、ノーマリ・ホワイトの場合で5V程度の入力振幅を必要とするが、中間調レベルだけを考えると、振幅は1.5～2Vになる。以上のこととは、中間調レベル表示においては、応答速度が二値表示の場合より遅くなることを示している。このことは、液晶をTV等のフルカラー表示に用いた場合問題になる。

【0012】すなわち液晶表示装置をTV等のフルカラー表示に用いる場合、中間調レベルでの応答速度を10msec程度にする必要があるが、現状は三値表示でも20msec程度にしかなっていない。このため、動画表示には著しく残像が目立ち、高画質が得られない。

【0013】

【発明が解決しようとする課題】以上のように従来の液晶表示装置では、中間調レベルでの応答速度が十分でなく、TV等のフルカラー表示に用いた場合に高画質が得られないという問題があった。

【0014】本発明はこの様な点に鑑みなされたもの

で、中間調レベルでも二値表示なみ若しくはそれ以上の応答速度を実現し得る駆動回路を備えた液晶表示装置を提供することを目的とする。

【発明の構成】

【0015】

【課題を解決するための手段】本発明にかかる液晶表示装置は、入力画像信号の少くとも一枚のフィールド画像を保持する画像用記憶回路を備え、この記憶回路に保持された画像信号と入力画像信号とから各画素の時間軸方向のレベル変動を検出して、その出力に応じて入力画像信号の各画素の時間軸方向に高域強調フィルタをかける時間軸フィルタ回路を設けたことを特徴とする。

【0016】

【作用】本発明によれば、液晶分子の応答速度が遅い場合でも、入力画像信号の高域成分を予め持ち上げるという処理を行って液晶部に供給することにより、応答の立ち上がり、たち下がりを高速化することができる。したがって特に中間調レベルでの応答速度が改善され、TV等のフルカラー表示に用いて高画質を得ることができる。

【0017】

【実施例】以下、本発明の実施例を説明する。

【0018】図1は第1の実施例の要部構成を示す。図の入力画像信号 S(t) は、ビデオ信号を R, G, B に分解した後の信号であるが、R, G, B 信号に対して同じ処理になるので、ここではそのうちの1チャネルのみ示している。入力画像信号 S(t) は、少なくとも1フィールド分の画像信号を記憶する画像用記憶回路 1 に保持される。差分器 2 は、入力画像信号 S(t) と画像用

記憶回路1とから、対応する各画素信号の差をとるもので、1フィールドの間の信号レベルの変化を検出するレベル変換検出回路となっている。この差分器2から得られる時間軸方向の差信号Sd(t)は、入力画像信号S(t)と共に時間軸フィルタ回路3に入力される。

【0019】時間軸フィルタ回路3は、差信号Sd(t)に応答速度に応じた重み係数 α をかける重み付け回路32と、重み付けられた差信号と入力画像信号S(t)を加算する加算器31とから構成されている。これはレベル変換検出回路の出力と入力画像信号の各画素の入力レベルによりフィルタ特性が変化させられる適応型フィルタ回路である。この時間軸フィルタ回路3によって入力画像信号S(t)は時間軸方向の高域が強調される。こうして得られた高域強調信号は、極性反転回路4によって交流信号に変換されて液晶表示部5に供給される。液晶表示部5は、複数本のデータ信号配線とこれと交差する複数本の駆動信号配線の各交差部に表示電極を持つ、アクティブマトリクス方式の液晶表示部である。

【0020】図2はこの実施例により、応答特性が改善される様子を示す信号波形である。説明を分かり易くするため入力画像信号S(t)が1フィールド周期で変化するものとし、図では2フィールドで信号レベルが急激に変化している場合を示している。この場合時間軸方向の入力信号変化すなわち差信号Sd(t)は図に示すように、入力画像信号が正に変化するときに1フィールド間正になり、負に変化するときに1フィールド間負になる。基本的にはこの差信号を入力信号に加えることにより、高域強調ができる。しかしながら実際には、液晶の応答速度によって入力信号変化がどの程度液晶セルの透過率変化になるかが変わってくるので、オーバーシュートが生じない範囲で補正するように重み係数 α をかける。これにより図示のような高域が補正された信号Sc(t)が得られる。この様に高域が強調される信号が液晶表示部に入力されることにより、光学応答特性I(t)は、破線で示す従来のものに対して実線で示すように改善される。

【0021】具体的には、図3に示すように液晶の伝達関数をHLCD(ωt)とすると、高域強調関数Hc(ωt)が掛けられた後の周波数特性Ht(ωt)は以下のようになる。

$$Ht(\omega t) = LCD(\omega t) \cdot Hc(\omega t)$$

$$Hc(\omega t)$$

$$= \alpha [1 - \exp(j \cdot 2\pi \omega t / \omega_c)] + 1$$

$$\omega_c = 2\pi / 60$$

【0022】すなわちこの実施例では、Ht(ωt)が広帯域化できるように、LCD(ωt)が低下するところをHc(ωt)により補償することになる。実際にこの特性を求め、或いは重み係数 α を決めるためには、従来技術で説明した液晶分子のダイナミック特性を記述す

る式(3)～(5)を α をパラメータとして解いていくことになる。

【0023】図4は第2の実施例の要部構成を示す。なお以下の実施例では図1と対応する部分に図1と同一符号を付して詳細な説明は省略する。従来技術で説明したように液晶の応答速度は、立上がりと立ち下りとで異なるのが通常である。そこで入力の変化が立上がり方向の変化であるか、立ち下り方向の変化であるかを検出して、それぞれの場合で高域強調量を異ならせる方法が考えられる。これを実現したのが第2の実施例である。

【0024】すなわちこの実施例では、二つの重み付け回路321と322を設け、フィールド間差分が正の場合(つまり立上がりの時)は、高域強調のための重み係数を α_1 、負の場合(つまり立ち下りの時)はこれを α_2 とする。これらの重み付け回路321, 322の出力を切り替え回路33により切り替えて、加算器33に与えるようにしている。

【0025】これにより、図5に示すように、立ち上がりと立ち下りとで異なるそれぞれ最適の高域強調量を付けた補正信号Sc(t)を得て、光学応答特性I(t)をより高速化することができる。

【0026】図6は第3の実施例の要部構成である。図6(a)が第2の実施例と異なる点は、高域強調量を変化させる制御パラメータとして、入力の変化だけでなく、入力レベルそのものをも含めたことである。これは、液晶の応答速度が入力電圧の変化だけでなく、電圧の初期値または変化後の電圧にも依存することを考慮して、より正確な高域補償を行うためである。

【0027】図6(b)は図6(a)をより一般化した実施例である。重み付け回路32の重み係数 α は、入力のフィールド間差分および入力レベルにより変化する。さらに図6(c)に示す実施例は、高域を持ち上げたい部分の周波数を高次のバンドパスフィルタBPF(またはハイパスフィルタHPF)1'により抽出して、その出力と入力レベルにより重み付け回路32の重み係数 α を制御する構成としている。この実施例によると、液晶の応答特性を補償する上でより適した高域強調フィルタとすることができる。

【0028】図7は第4の実施例の要部構成を示す。従来技術で少し説明したが、応答速度はセルギャップの二乗 d^2 に反比例している。つまり、セルギャップ d を小さくすれば応答速度は速くなる。しかし、コントラストを高くとるために $\Delta n d / \lambda$ (Δn :屈折率の異方性、 λ :入力波長)をモーガンの条件を満たすようにしなければならない。したがって最適なコントラストを得るために R, G, B によってセルギャップを変える必要がある。これは、マルチギャップと呼ばれる。この様な場合当然ではあるが、 R, G, B によって応答速度が異なるという問題が生じる。そこでマルチギャップに対応させるべく、 R, G, B でそれぞれ高域強調量を最

適に制御するようにしたのがこの実施例である。ここでは図6(b)の基本回路を3つ用いたが、他の実施例の基本回路3つを用いてもよい。

【0029】図8は第5の実施例の要部構成を示す。この実施例では、図6(b)の実施例の回路に加えて、液晶表示部5の液晶温度を検出する温度検出器6を設け、この温度検出器6の出力により重み付け回路32を制御するようにしている。

【0030】図9に示したように、液晶の応答特性には強い温度依存性があるだけでなく、立上がりと立ち下がりとで異なった温度依存性を示す。これは、立上がりは粘性 α の温度依存性に大きく影響されるのに対し、立ち下がりは粘性 α の温度依存性を分母の弾性定数Kの温度特性が緩和するようになっていている。したがってこの実施例のように、液晶温度を検出してその出力に応じて高域強調パラメータである重み係数 α を変化させるように制御する事により、応答特性の最適補償を行うことが可能になる。

【0031】図10は、液晶の物性定数の温度依存性を示している。図に示すように液晶の物性定数は温度によって変化する。したがってこの物性定数の変化を検出することにより温度検出を行うことができる。同じパネル内の液晶を用いて温度検出ができるれば、そのパネルに最も適した温度補償ができる。

【0032】図11は、その様な液晶を用いた液晶温度検出器の構成例である。図10に示したように液晶の誘電率 ϵ は温度によって変化する。したがって誘電率の変化、つまり液晶容量CLCDの変化を外づけの容量CDによって電圧に変換して出力するのが、図11の温度検出原理である。つまり、図11の入出力の関係は、

$$V_{out} = V_{in} \cdot CLCD / (CD + CLCD)$$

と表されるので、液晶容量CLCDの変化を出力 V_{out} の変化として検出することができる。

【0033】液晶温度検出法としてはこの他に、光検出器を用いて液晶のしきい値 V_{th} の温度による変化を光量変化として検出する方法、マイクロプロセッサを用いてある一定時間毎に立ち上がり、立ち下がり時間を計算し、オーバーシュートのないような制御を常にフィードバックで行う方法等が考えられる。

【0034】図12は、第6の実施例の要部構成である。この実施例では、入力画像信号の動きを検出する動き検出回路8が設けられている。この動き検出回路8により検出された動き量に応じて、フィールド内とフィールド間の補間の重み付け量が決定されると共に、順次走査変換回路7において、時間軸圧縮によりインタースペクトラル信号(順次走査信号)に変換される。この順次走査変換された信号が液晶を実際に駆動する信号になるので、この信号が1フィールド期間つまり1画面の信号書き替え周期にどれだけ変化したかが、液晶の応答速度を決める重要なパラメータになる。

【0035】そこで、記憶回路1と差分器2により求まる1フィールド期間内の変化量に入力レベルと動き量に応じて変化する重み係数 α を掛ける重み付け回路32と加算回路31により構成される時間軸強調フィルタによって、順次走査変換信号が補正される。

【0036】図13は、動き検出回路8の具体的な構成例である。輝度信号の動きは、フレームメモリ11の出入力の差を差分器13により検出して、LPF14により1フレーム差分として検出される。色信号の動きはフレームメモリ11とフレーム遅延回路12の直列回路の入出力の差を差分器16により検出して、BPF17により2フレーム差分として検出される。これらの差分信号はそれぞれ絶対値検出回路15、18を通り、最大値検出回路19により最大値が検出される。この最大値検出回路19の出力は伸長回路20を通り、デコーダ21を通って動き信号として出力される。伸長回路20は、速い動きに対して検出漏れがないように、2フィールドの動き情報をを利用して時空間フィルタをかけるために設けられている。

【0037】この様な構成により画像の動きが検出されるわけであるが、誤検出はやはりある。たとえば、静止画のノイズを動画として検出すると、図12の構成ではそのノイズを α 倍してしまうことになる。

【0038】この誤検出を救済するためには、たとえば重み係数 α のテーブルを、図14(a) (b) のように設定することが考えられる。図14(a)に示すように、動き量が小さい時はこれをノイズと判断して、高域強調をかけないようにする。実際に、動き量をフィールド間差分とした場合で、図14(a)の破線のテーブルと実線のテーブルで比較した結果、実線のテーブルの方がノイズが大幅に減少することが確認されている。

【0039】図14(a)のテーブルの場合、画像によつては、不連続点が目立つ可能性がある。したがって図14(b)に示すように段階的に理想の線に近付けるテーブルを用いることも考えられる。

【0040】図15は、図12の実施例において、図8の実施例と同様に液晶温度検出を行つて、その出力に応じて高域強調パラメータである重み係数 α を変化させる制御を行うようにした実施例である。

【0041】ところで液晶表示部に場所によって温度ムラがある場合、一点の温度検出では最適温度制御ができない。この様な場合、液晶表示部の複数箇所の温度検出を行うことが有効である。

【0042】図16は、この様な観点から図15を改良した実施例である。この実施例では、液晶表示部5を4分割して、各小画面の4角の温度をスイッチ22により切り替えて検出する。スイッチ22は画面位置検出回路23によって制御される。この様にして検出される複数箇所の温度のなかから重み係数 α の制御データとして最適のものを用いる。同様の变形は、先の図15の実施例

に対しても行うことができる。

【0043】なお、液晶表示部の4角の温度データそのまま用いるのではなく、例えば図17に示すような基準となる温度ムラパターンを用意しておいて、端 x_e の温度が $C T_0$ になつたら、距離 x_1 での温度を $C T_1$ にするという予測を行つようすることも有効である。

【0044】図18は、図12の実施例に対して更に、画像信号入力部に雑音除去フィルタ24を設けた実施例である。先に説明したように入力信号に雑音があると、誤検出によって雑音を増幅してしまう可能性がある。この実施例のように雑音除去フィルタ24を設けることによって、誤検出を少なくすることができる。この雑音除去が有効に働くならば、動き検出回路8を省略することもできる。先に説明した図1、図4、図8の実施例に対しても同様に雑音除去フィルタを入力端子部に設けることは有効である。

【0045】

【発明の効果】以上詳細に説明したように本発明によれば、時間軸フィルタを用いて入力画像信号の高域強調を行うことにより、液晶表示装置の応答特性を改善し、特に中間調表示での応答速度を高速化して、残像を低減した高画質の液晶TVを実現することができる。

【図面の簡単な説明】

- 【図1】本発明の第1の実施例の要部構成を示す図。
- 【図2】同実施例の動作を説明するための信号波形図。
- 【図3】同実施例の高域強調フィルタの特性を示す図。
- 【図4】第2の実施例の要部構成を示す図。
- 【図5】同実施例の動作を説明するための信号波形図。
- 【図6】本発明の第3の実施例の要部構成を示す図。
- 【図7】本発明の第4の実施例の要部構成を示す図。

【図8】本発明の第5の実施例の要部構成を示す図。

【図9】液晶の応答速度の温度依存性を示す図。

【図10】液晶の物性定数の温度依存性を示す図。

【図11】液晶の温度検出器の構成例を示す図。

【図12】動き検出回路を備えた実施例の要部構成を示す図。

【図13】同実施例の動き検出回路の構成例を示す図。

【図14】動き量と高域強調量の関係を示す図。

【図15】図12の実施例に温度検出器を設けた実施例の要部構成を示す図。

【図16】図15を変形して複数箇所の温度検出を行うようにした実施例を示す図。

【図17】温度制御のための基準温度分布を示す図。

【図18】雑音除去フィルタを設けた実施例の要部構成を示す図。

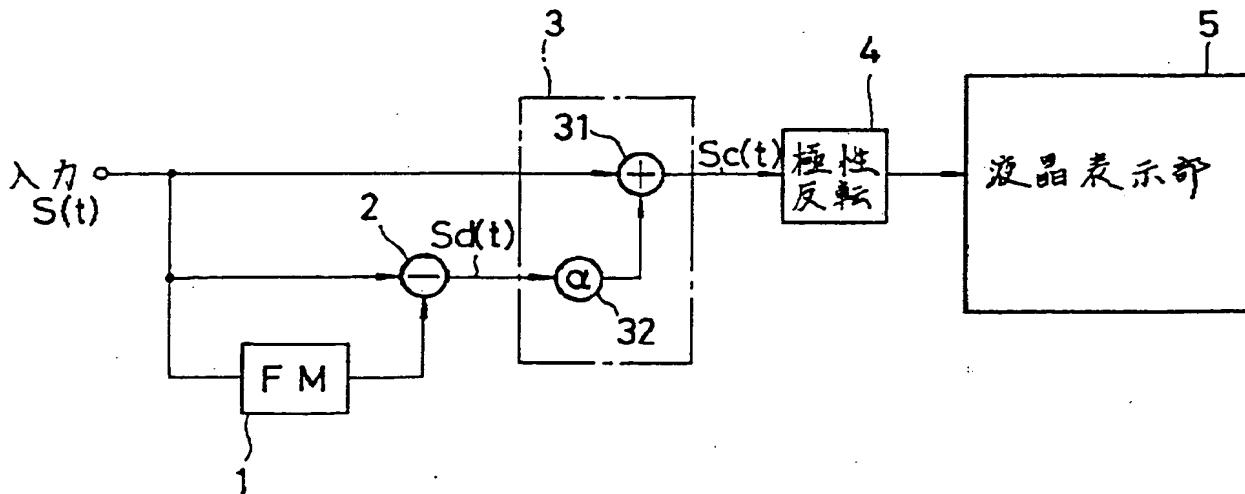
【図19】液晶の応答速度を説明するための図。

【図20】液晶の透過率の入力電圧依存性を示す図。

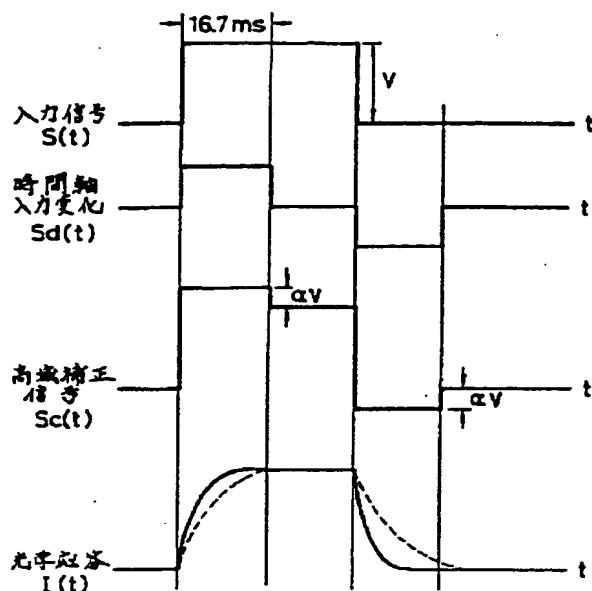
【符号の説明】

- 1…画像用記憶回路、
- 2…差分器（レベル変化検出回路）、
- 3…時間軸フィルタ回路、
- 31…加算器、
- 32…重み付け回路、
- 33…切替え回路、
- 4…極性反転回路、
- 5…液晶表示部、
- 6…温度検出器、
- 7…順次走査変換回路、
- 8…動き検出回路。

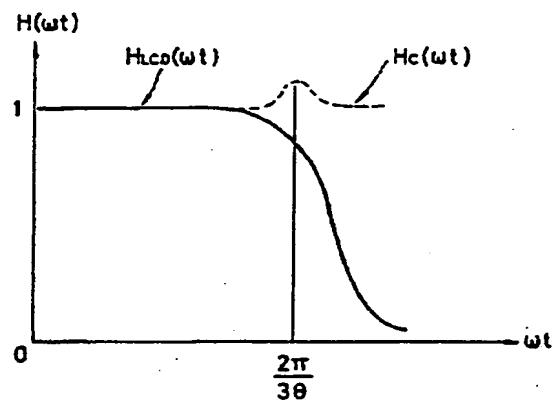
【図1】



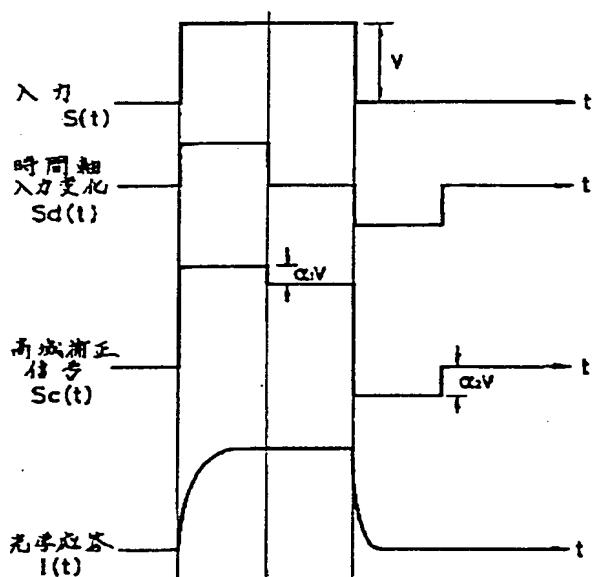
【図2】



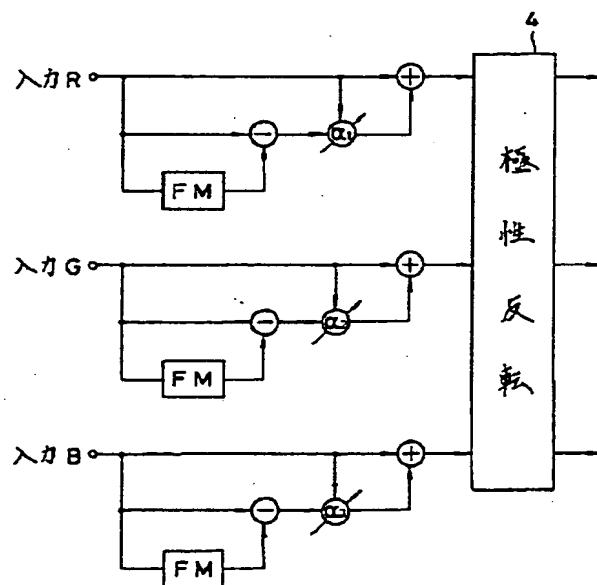
【図3】



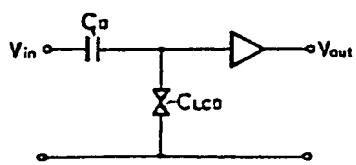
【図5】



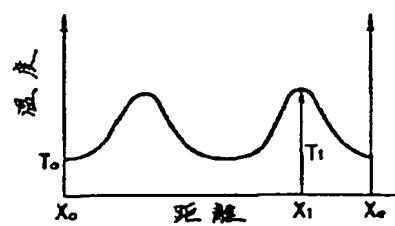
【図7】



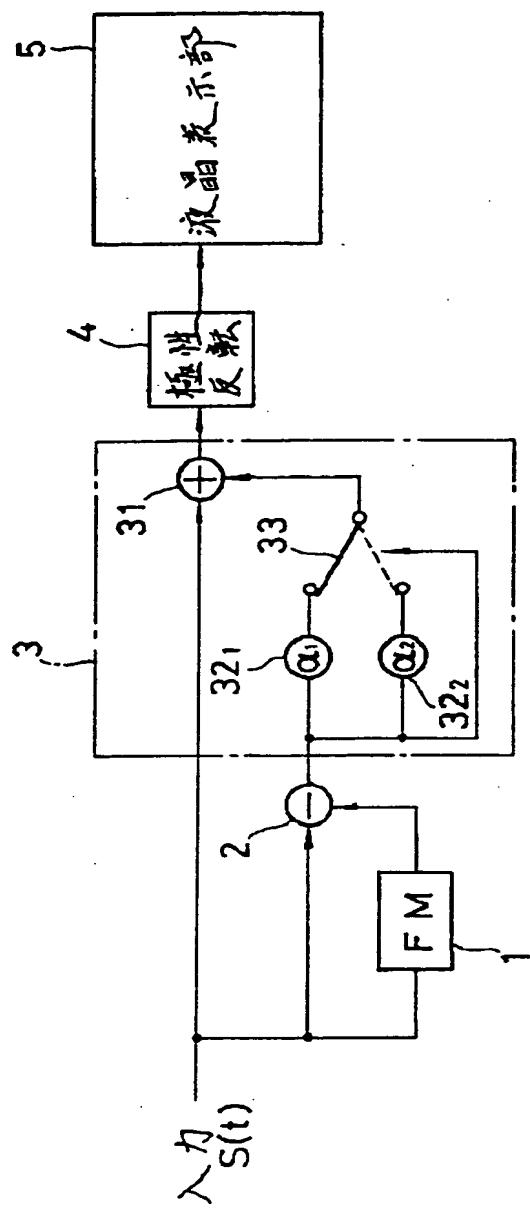
【図11】



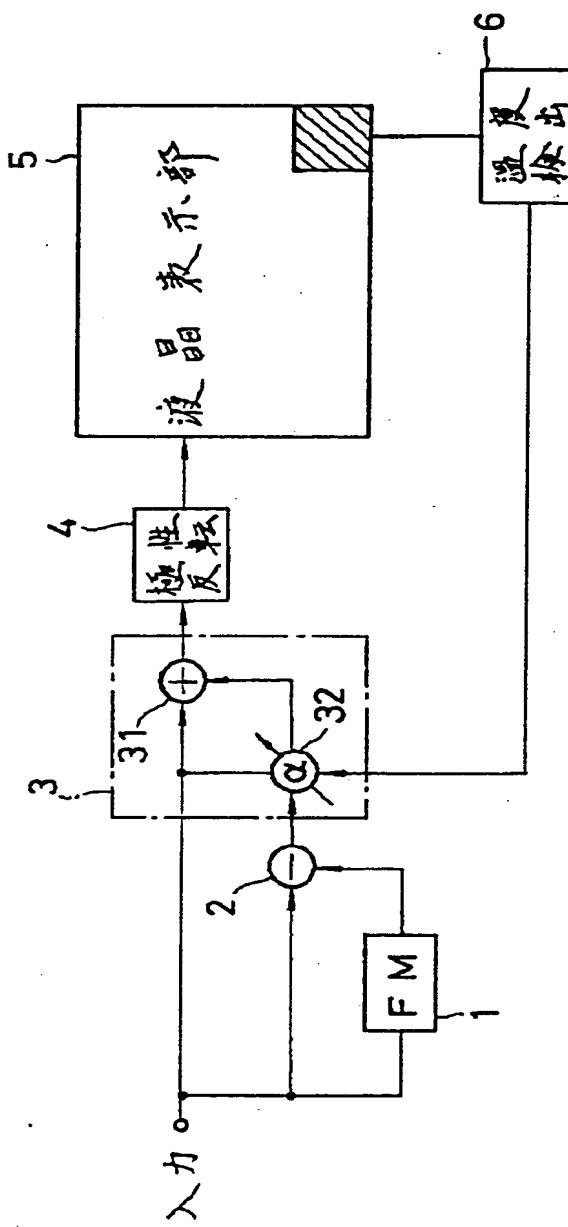
【図17】



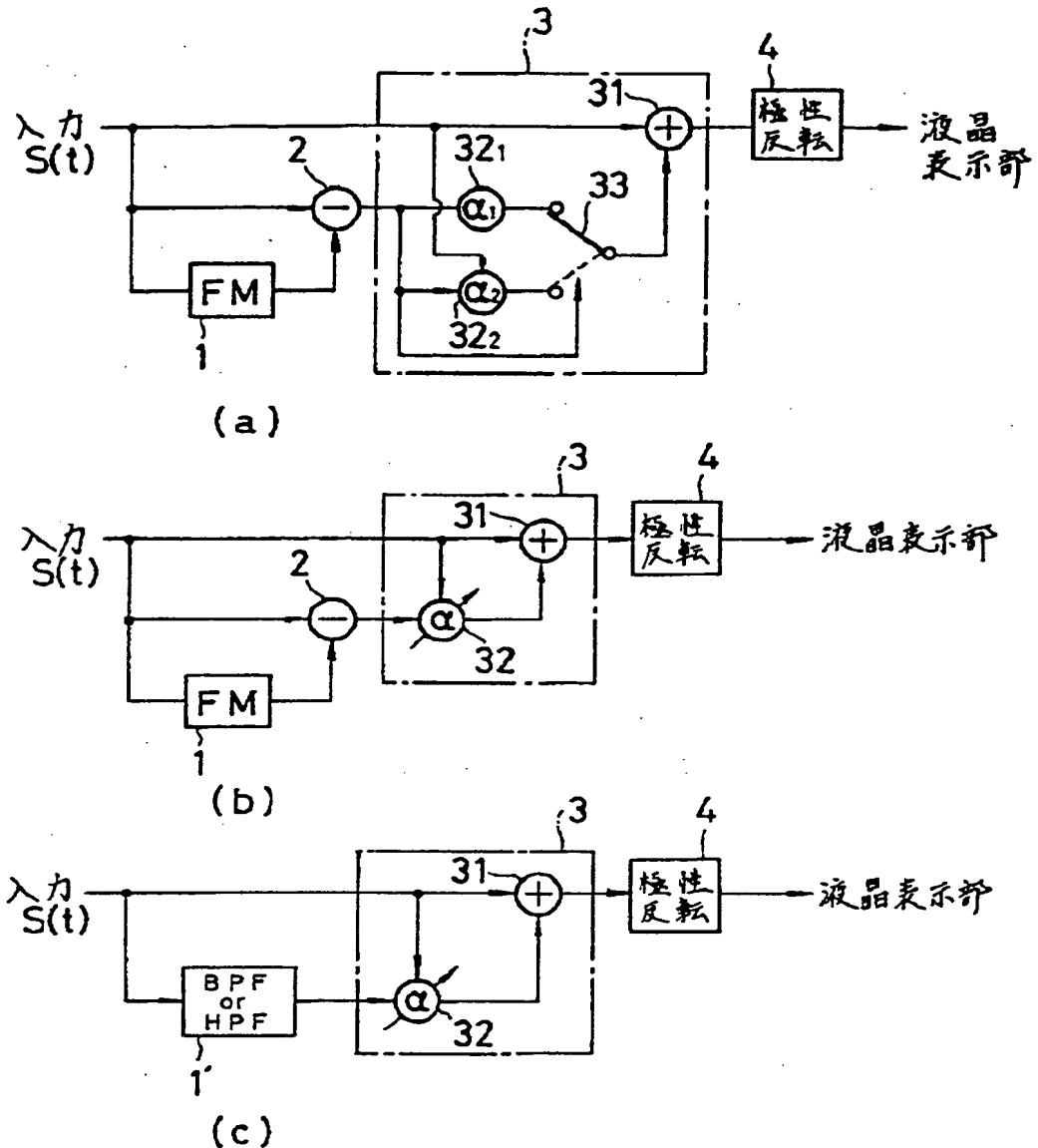
【図4】



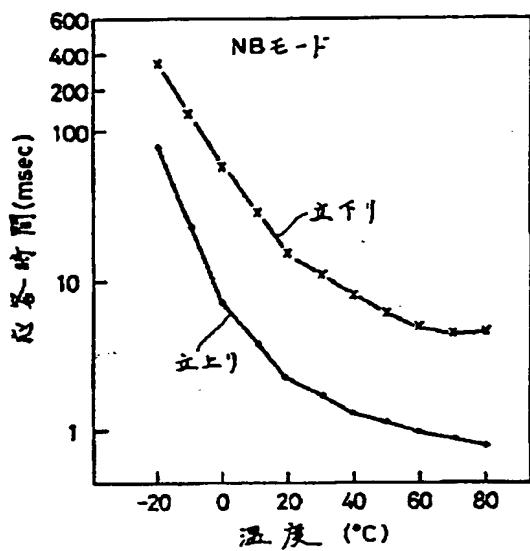
【図8】



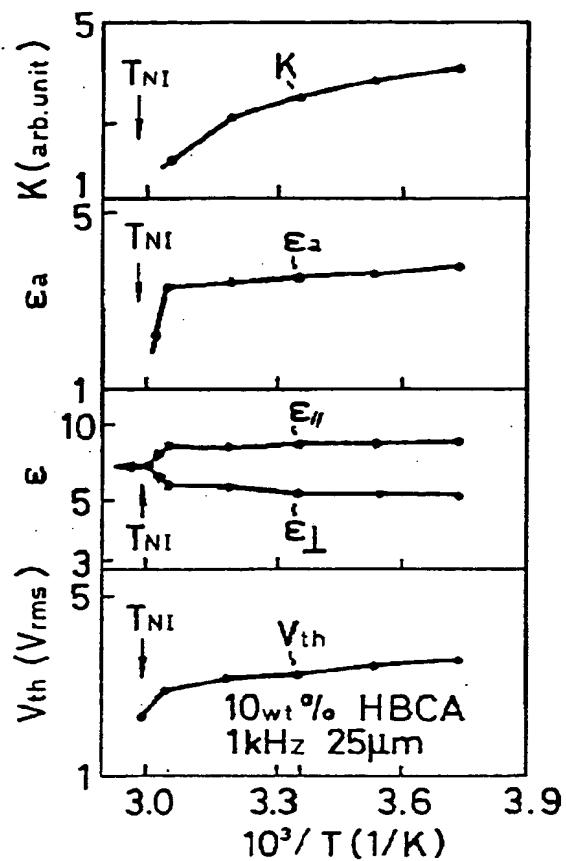
【図6】



【図9】



【図10】



【図12】

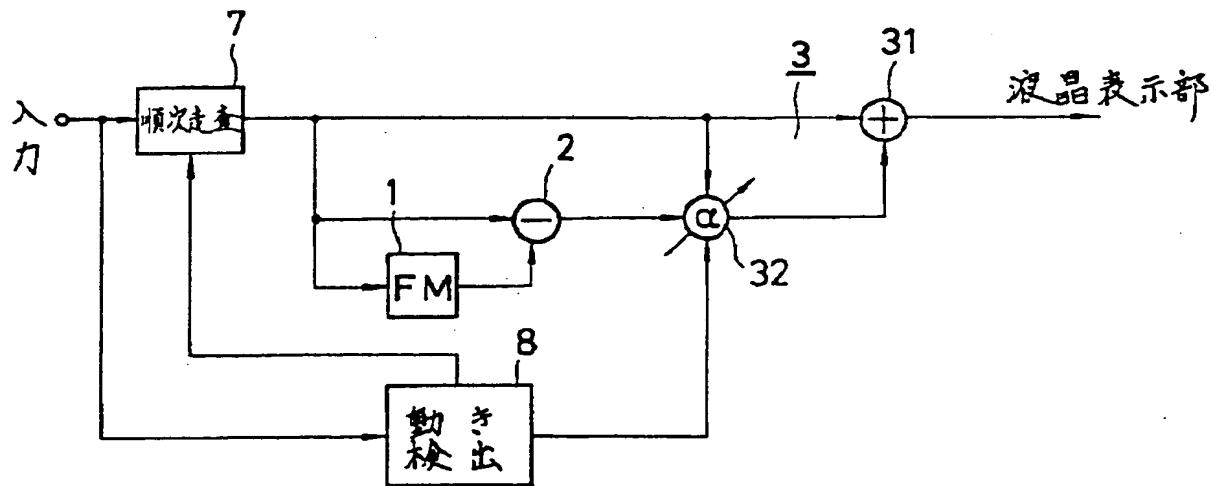
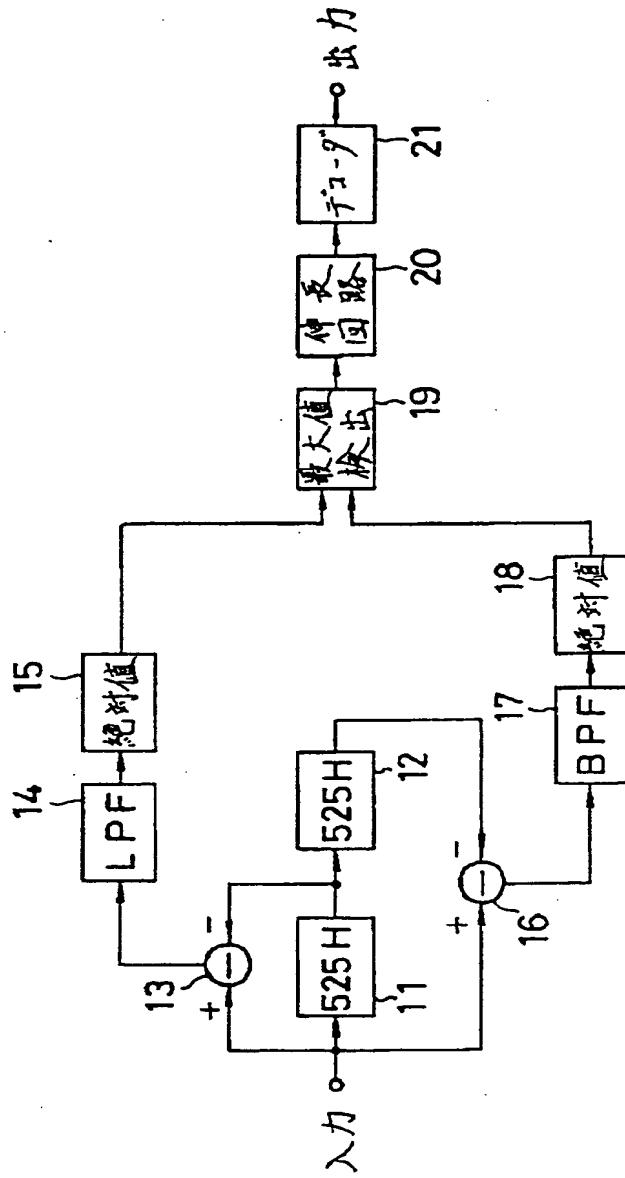
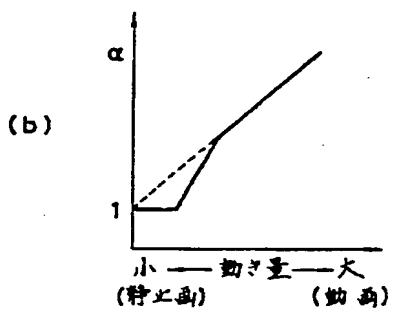
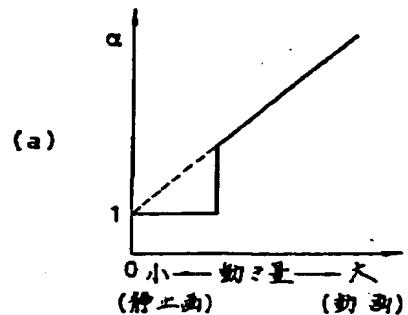


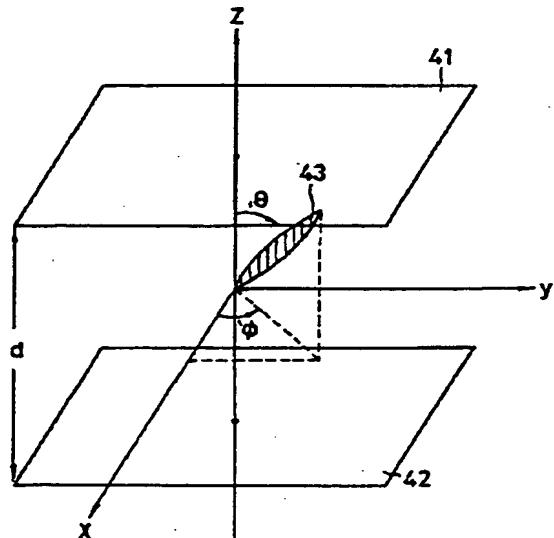
図13]



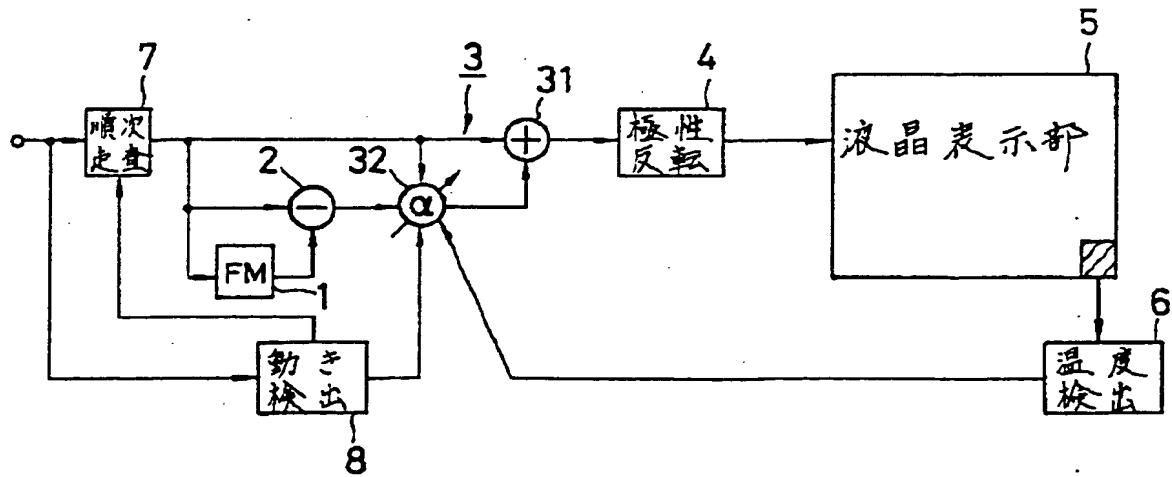
【図14】



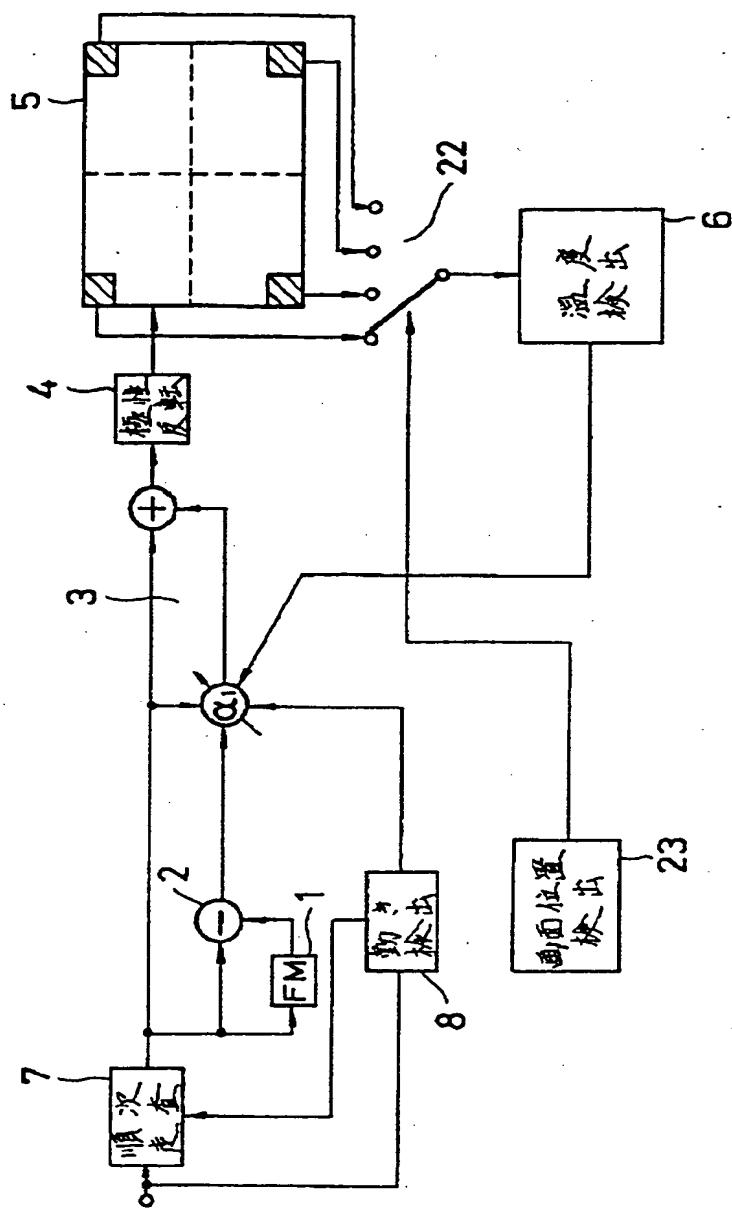
【図19】



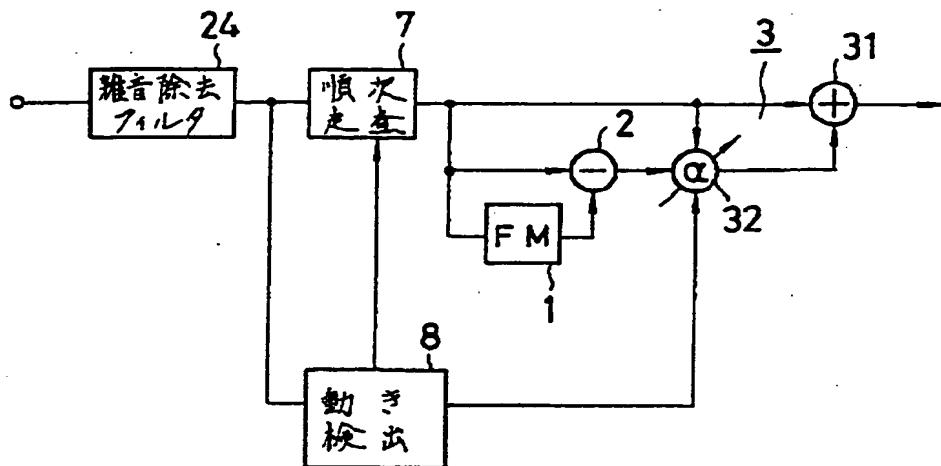
【図15】



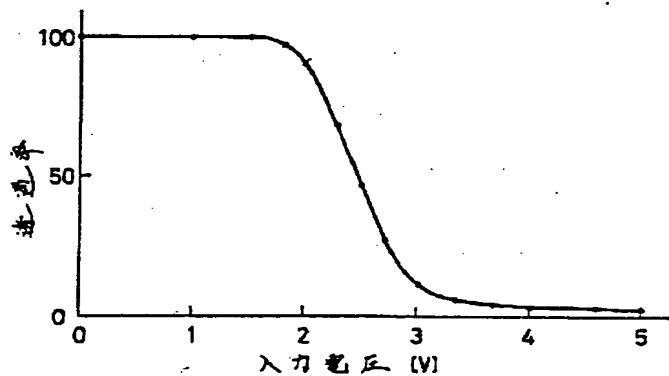
[図16]



【図18】



【図20】



DSC/OAT 55750 (45672)



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/820,021	03/28/2001	Takako Adachi	55,750 (45672)	5288

21874 7590 06/18/2003

EDWARDS & ANGELL, LLP
P.O. BOX 9169
BOSTON, MA 02209

[REDACTED]

ZAMANI, ALI A

[REDACTED]

ART UNIT PAPER NUMBER

2674

DATE MAILED: 06/18/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

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Notice of Abandonment	Application No.	Applicant(s)	
	09/820,021	ADACHI ET AL.	
	Examiner	Art Unit	
	Ali A. Zamani	2674	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

This application is abandoned in view of:

1. Applicant's failure to timely file a proper reply to the Office letter mailed on 20 November 2002.
 - (a) A reply was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply (including a total extension of time of _____ month(s)) which expired on _____.
 - (b) A proposed reply was received on _____, but it does not constitute a proper reply under 37 CFR 1.113 (a) to the final rejection. (A proper reply under 37 CFR 1.113 to a final rejection consists only of: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114).
 - (c) A reply was received on _____ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
 - (d) No reply has been received.

2. Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
 - (a) The issue fee and publication fee, if applicable, was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
 - (b) The submitted fee of \$_____ is insufficient. A balance of \$_____ is due.
The issue fee required by 37 CFR 1.18 is \$_____. The publication fee, if required by 37 CFR 1.18(d), is \$_____.
 - (c) The issue fee and publication fee, if applicable, has not been received.

3. Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
 - (a) Proposed corrected drawings were received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply.
 - (b) No corrected drawings have been received.

4. The letter of express abandonment which is signed by the attorney or agent of record, the assignee of the entire interest, or all of the applicants.

5. The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34(a)) upon the filing of a continuing application.

6. The decision by the Board of Patent Appeals and Interference rendered on _____ and because the period for seeking court review of the decision has expired and there are no allowed claims.

7. The reason(s) below:



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Washington, D.C. 20591-0001

Petitions to revive under 37 CFR 1.137(a) or (b), or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.



Applicant(s)

Interview Summary	Application No. 09/820,021	7
	Examiner Ali A. Zamani	Art Unit 2674

All participants (applicant, applicant's representative, PTO personnel):

(1) Ali A. Zamani. (3) _____.

(2) Davidid Collins & David A. Tucker. (4) _____.

Date of Interview: 10 June 2003.

Type: a) Telephonic b) Video Conference
c) Personal [copy given to: 1) applicant 2) applicant's representative]

Exhibit shown or demonstration conducted: d) Yes e) No.
If Yes, brief description: None.

Claim(s) discussed: None.

Identification of prior art discussed: None.

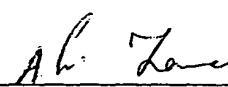
Agreement with respect to the claims f) was reached. g) was not reached. h) N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Examiner indicated that the case is abandoned.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.


 Examiner's signature, if required

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David G. Conlin
Direct Dial: (617) 517-5515
E-Mail: dconlin@ealaw.com

December 5, 2002

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Please contact this office should you have any questions. Thank you for your attention in this regard.

Sincerely,

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Enclosures

Customer Number Submission

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February 11, 2003

Mr. Tony Uranga
United States Patent and Trademark Office
Electronic Business Center
2231 Crystal Drive; Suite 903
Arlington, VA 22202

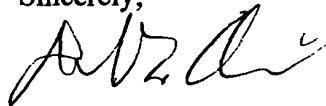
Re: Customer number 21874

Dear Mr. Uranga:

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Please contact this office should you have any questions. Thank you for your attention in this regard.

Sincerely,



David G. Conlin

Enclosures